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U. S. Department of Agriculture  
Forest Service  
APPALACHIAN FOREST EXPERIMENT STATION

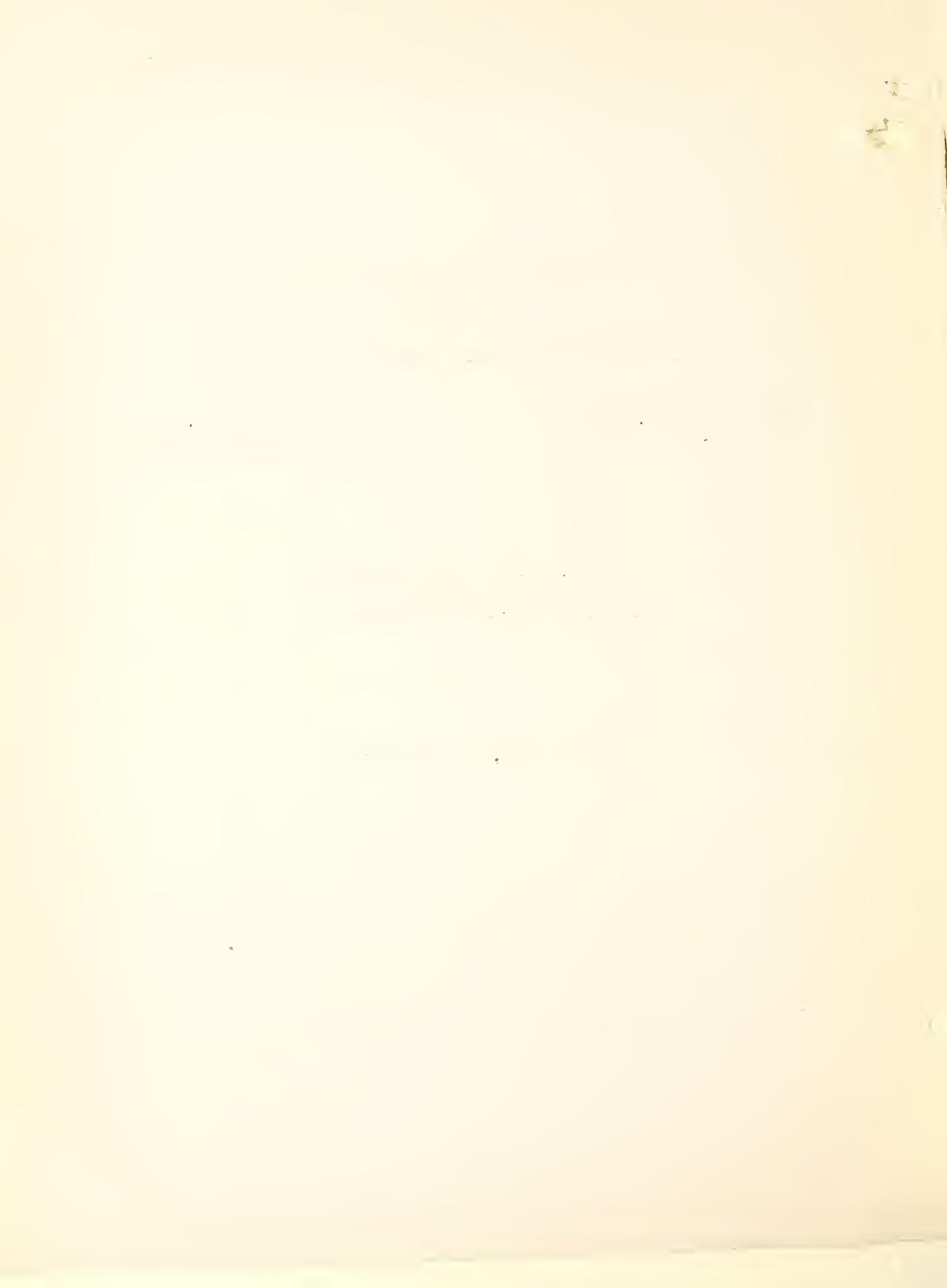
Technical Note No. 19  
Management - Mountains

Asheville, N. C.  
February 10, 1936

RECENT VOLUME TABLES FOR SOME  
SOUTHERN APPALACHIAN SPECIES

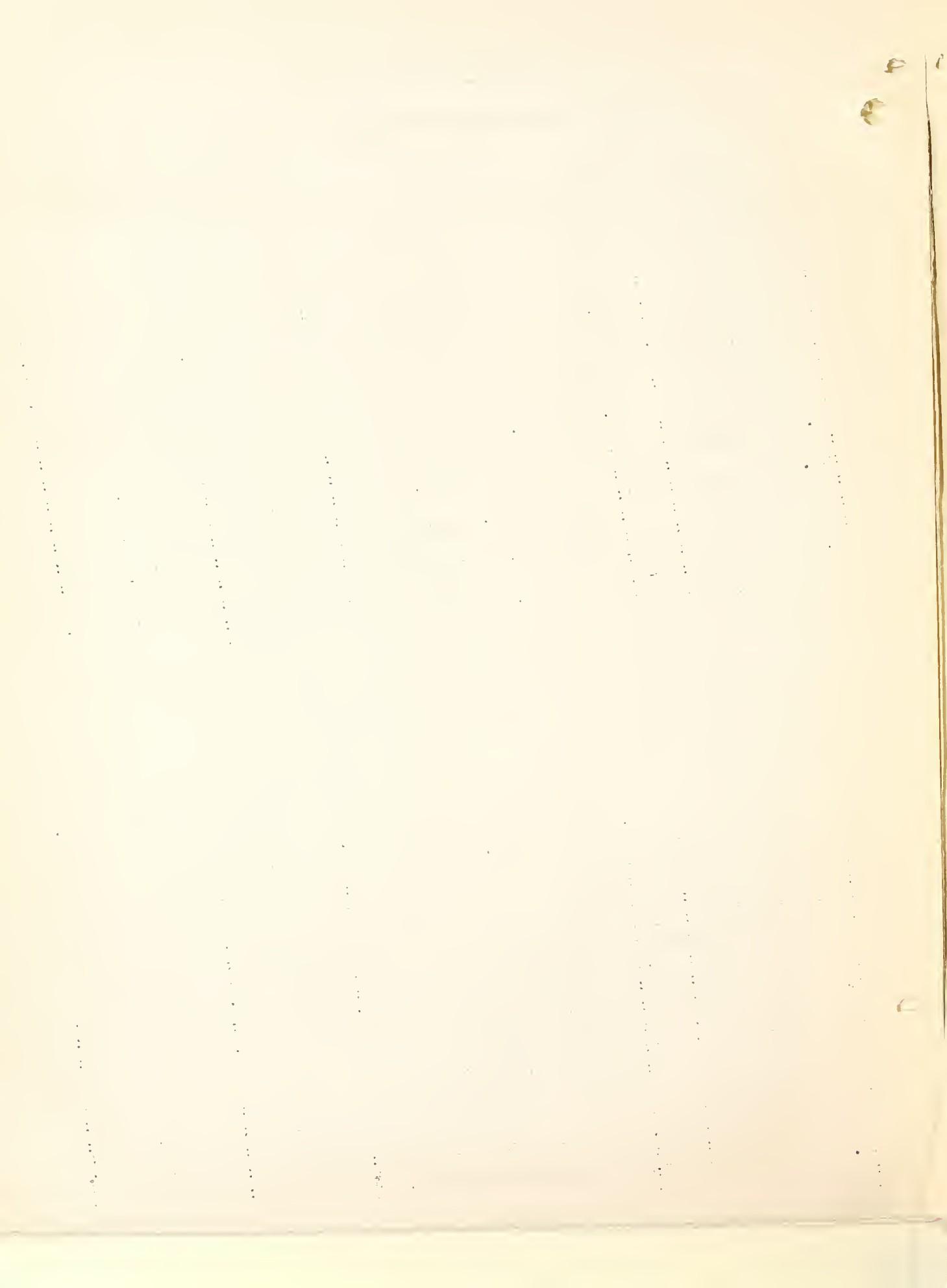
BY

L. I. Barrett, Silviculturist



INDEX TO VOLUME TABLES

Species	Site:	National Forest furnishing basic data	Tables by		Tables by	
			log lengths	Table	D.B.H. and Av. Merch. Ht.	Number
Chestnut Oak	III:	Nantahala		1		1A
White Oak	II:	Nantahala		2		2A
White Oak	III:	Nantahala		3		3A
N. Red Oak	II:	Nantahala		4		4A
Black Oak	II:	Nantahala		5		5A
Y. Poplar	II:	Nantahala		6		6A
Red Maple	II:	Nantahala		7		7A
Basswood	II:	Nantahala		8		8A
Shortleaf Pine	II:	Nantahala		9		9A
Shortleaf Pine	III:	Nantahala		10		10A
Shortleaf Pine	II:	Cherokee		11		11A
Shortleaf Pine	III:	Cherokee		12		12A
Virginia Pine	II:	Cherokee		13		13A
Chestnut	I:	Pisgah		14		14A
Chestnut	II:	Pisgah		15		15A
Sugar Maple	I:	Pisgah		16		16A
White Pine	I:	Pisgah		17		17A
Chestnut Oak	II:	Cherokee, Nantahala, Pisgah		18		18A
Y. Poplar	I:	Cherokee, Nantahala, Pisgah		19		19A
Sc. Oak	III:	Nantahala, Cherokee		20		20A
Basswood	I:	Pisgah, Nantahala		21		21A
W. Ash	-	Pisgah, Nantahala		22		22A
Black Birch	-	Cherokee, Nantahala, Pisgah		23		23A
		and Bland Co., Va.				



## Introduction

The volume tables presented in this technical note are the results of a cooperative project participated in by Forest Service personnel of Region 8 and the Appalachian Forest Experiment Station. Field data were collected by the personnel of the various national forests and computations were carried on by the experiment station with the assistance of men assigned to the project from cooperating forests.

Sufficient data were not available to prepare tables for all of the important commercial species nor were the data adequate for complete sets of site class tables by species. It is expected that additional tables and revisions of the present ones will be made from time to time as necessity indicates and more data are collected.

The present series is being released to fill, partially at least, an immediate need of the U. S. Forest Service, and of other public conservation agencies operating in the region.

## Utilization Represented by Tables

Since the original stem measurements were made on going logging operations the volume tables reflect the current utilization and scaling practice on the several national forests and are intended primarily for use on these areas or where similar practices prevail.

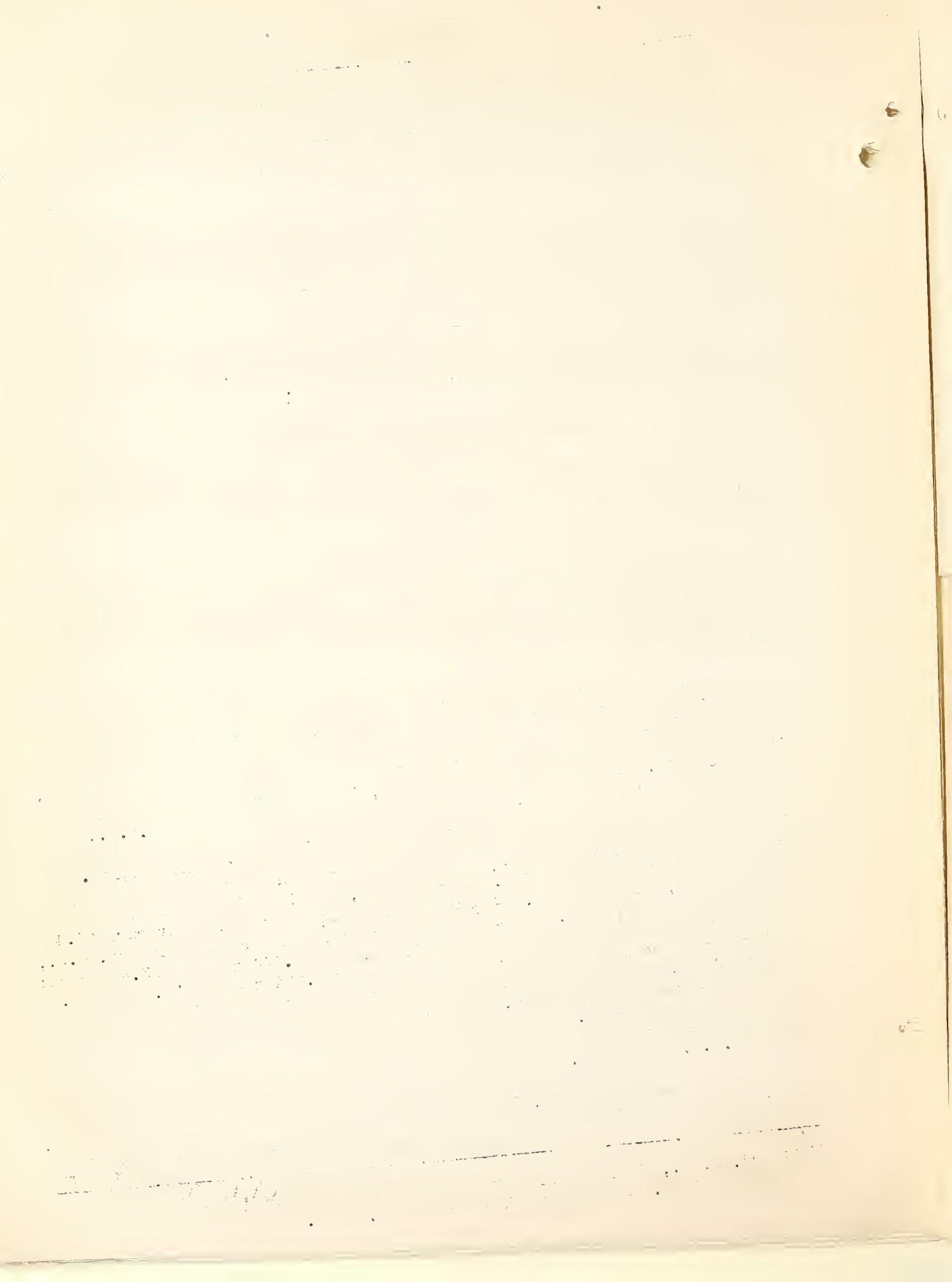
In building the tables several departures from conventional utilization standards were used. Actual top diameters as determined by the logger instead of fixed top diameters were used to establish merchantable heights and the gross volumes of individual trees were determined by scaling the logs as cut rather than by the conventional 16 foot log lengths.

The use of actual merchantable top diameters rather than fixed top diameters seems justified because both field observation and examination of the basic data indicate that saw log utilization to a fixed top diameter is not possible in the existing timber stands on southern Appalachian national forests. In the case of hardwoods, it was found that the utilized top diameter, outside bark, when expressed as a percentage of d.b.h., was approximately the same for all diameter classes. This constant percentage relationship has already been reported by Girard<sup>1</sup> for another region. For the hardwoods, therefore, a single percentage appears to be an adequate expression of top utilization. For example, on Site II the merchantable top diameter, outside bark, of northern red oak was found to average 74.4% of breast high diameter. In terms of averages, the merchantable top, o.b., of 18 inch northern red oaks on Site II would be  $0.744 \times 18$  or 13.4 inches; 36 inch trees would have a merchantable top of  $0.774 \times 36$  or 26.8 inches. Judging from the data at hand, this percentage expression of merchantable top, in the case of hardwoods, appears to be more closely associated with site than with species. In terms of gross averages for the hardwood species, the merchantable top diameters were found to be approximately 68% of d.b.h. on Site I, 74% on Site II and 88% on Site III.

The merchantable top, in terms of percent of d.b.h. for the conifers, was found to be definitely associated with diameter but in no case did the

<sup>1/</sup>

Girard, J. W., Volume Tables for Mississippi Bottomland Hardwoods and Southern Pines. Journal of Forestry 31:38. 1933.



extent of this association indicate that the use of a fixed top diameter was advisable. Due to the few coniferous species for which data were available and the fact that the trees of two of the species were second growth, comparisons of top utilization by sites showed no definite trends as was the case with hardwoods. Top utilization in the second growth white pine used to construct Tables 17 and 17A varied from 71% of d.b.h. at 10 inches to 39% of d.b.h. at 30 inches. For the second growth Virginia pine used in making Tables 13 and 13A, utilization ranged from 75% of d.b.h. at 10 inches to 57% at 20 inches. A similar comparison by site classes was possible in the case of shortleaf pine but differences in the top utilization percentages between sites were small and could not be considered significant. An average utilization for this species was found to range from 76% of d.b.h. at 10 inches to 61% at 30 inches.

The gross volume of individual trees was determined by scaling the logs in the lengths cut rather than in 16 foot lengths because in the usual southern Appalachian sawtimber operation the bulk of the logs are cut in short lengths. Analysis of the basic data collected on the three national forests show that 70% of all logs cut were shorter than 16 feet. Volumes given in the tables, therefore, more nearly reflect the actual board foot scale as determined by the general woods practice of the region that would have been the case if scaling had been done by 16 foot log lengths. However, in Tables 1 - 23 merchantable heights are expressed in terms of 16 foot logs for convenience in use.

#### Considerations in Application of Tables

It will be noted that two series of volume tables are presented. The first series, Tables 1 - 23, are in conventional form and require no explanation other than that already given. They are intended primarily for use where a fair degree of accuracy is required and where field tallies allow the recording of both d.b.h. and estimated merchantable heights.

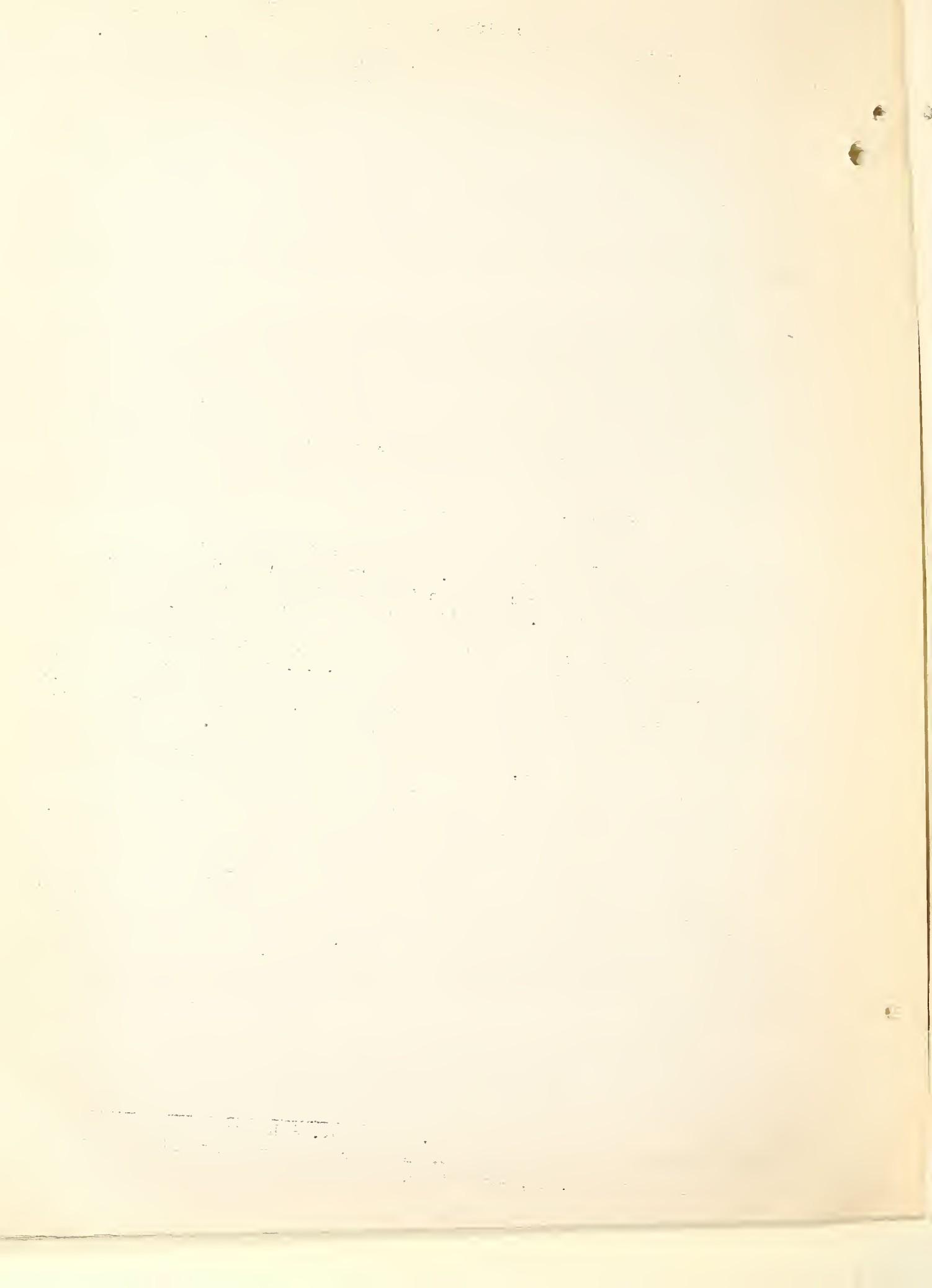
Tables 1A - 23A were made from the same data as was the original series but give gross and net tree volumes by d.b.h. class and average merchantable height. These tables are intended for comparatively rough approximations of volume in extensive work where field tallies omit the consideration of height and only breast high diameters are recorded.

In this second series, average merchantable heights (column 2) and defect percentages (column 4) were obtained by the use of fitted free hand curves. For certain species the data were not adequate for highly satisfactory expressions of these relationships. This is reflected in the somewhat high aggregate differences shown for several of the tables.

Although the defect percentages and consequently the net volumes may be adequate for the immediate localities in which the basic data were gathered it is known that defect varies widely with locality and is dependent largely on the past fire history of individual stands.<sup>27</sup> Therefore the field man should make every effort to revise these tables in accordance with additional local experience.

It is also urged that in cases where the average merchantable heights shown in column 2 do not correspond with local utilization a new curve be drawn from local data. Diameter and new merchantable height data can then be substituted in the basic formula given with each table and new gross volumes can be computed. These can in turn be reduced by the application of local defect data.

<sup>27</sup> Hepting, George H. and Hedgecock, George G., Relation Between Butt Rot and Fire in Some Eastern Hardwoods. Appalachian Forest Experiment Station



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 1 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)						
	by 16 ft. log lengths						
	$\frac{1}{8}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$
10	2	3	4				
12	3	4	6	7			
14	4	7	9	11	13		
16	6	10	13	16	18	21	
18	8	13	17	21	25	29	
20	10	17	23	28	33	38	42
22	13	22	30	36	43	49	54
24	17	28	37	46	54	61	68
26	21	34	46	56	66	76	84
28	25	42	56	68	80	92	103
30	30	50	67	82	97	110	123
32	36	59	79	97	114	130	146
34	42	70	93	115	135	154	172
36	49	81	108	133	156	178	199
38		93	125	154	180	206	230
40		106	143	176	206	235	263
42			162	199	234	267	298

Block indicates extent of basic data

Aggregate difference: Table 0.24% high

Average individual deviation: 10.7%

Based on 71 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.635 (\log. \text{d.b.h., inches}) + 0.721 (\log. \text{merch. ht. ft.}) - 2.062$$

Table can be extended by formula as follows:

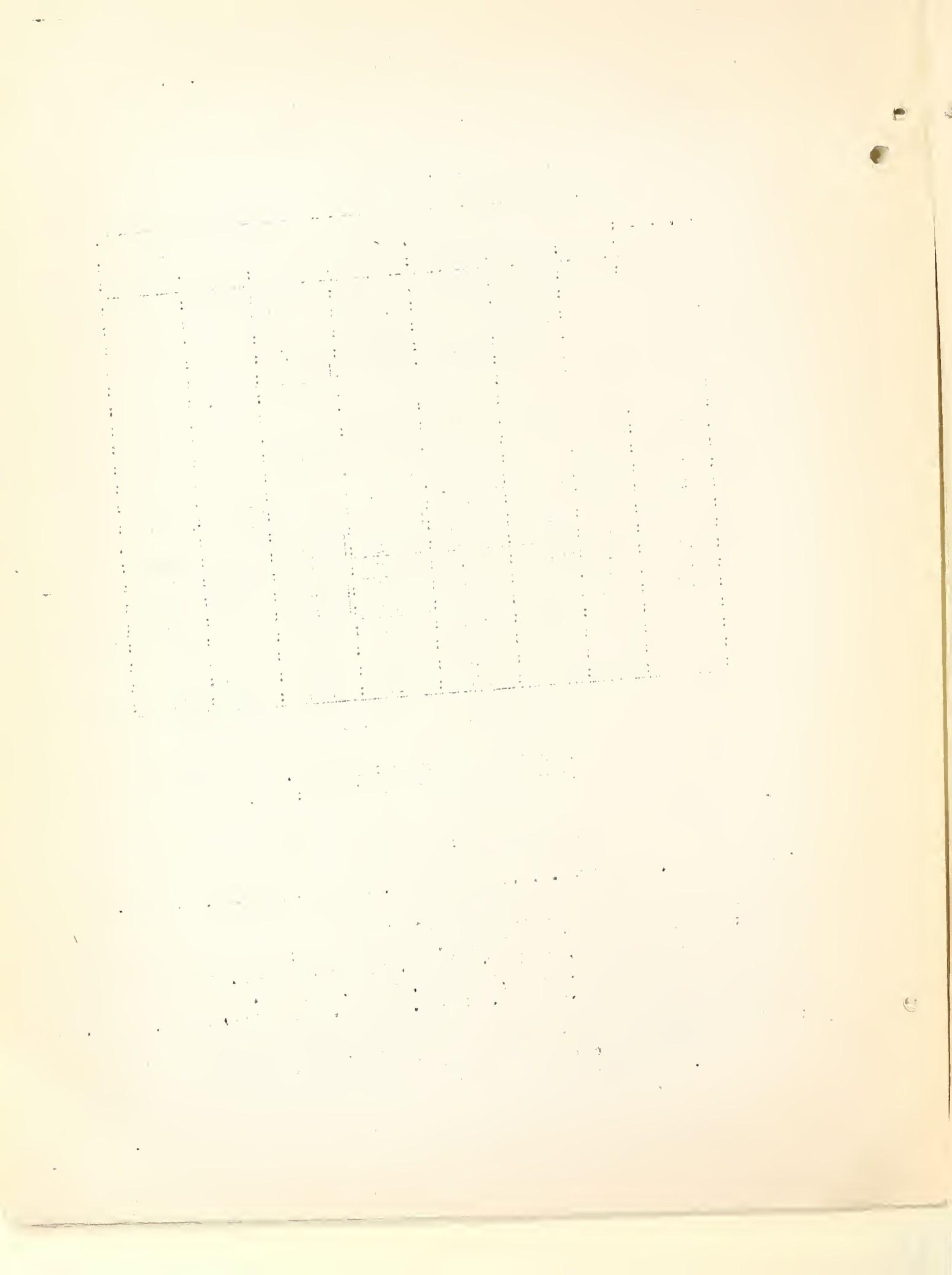
Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.635 (\log. 54) + 0.721 (\log. 48) - 2.062$$

$$V = 2.635 (1.732) + 0.721 (1.681) - 2.062$$

$$V = 4.564 + 1.212 - 2.062 = 3.714, \text{ Antilog. is } 5,176 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M - 1  
(S-Timber Surveys)

TABLE 2 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

WHITE OAK - SITE II

Nantahala National Forest  
Trees over 75 years old  
Utilization: 1 ft. stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)							
	by 16 ft. log lengths							
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
10	2	3	4	5	6	7	8	9
12	4	5	7	8	10	12	14	15
14	5	8	10	12	14	15	17	19
16	7	10	14	17	19	22	25	28
18		15	19	23	26	29	32	35
20		20	25	30	34	38	42	46
22		25	32	38	44	49	54	59
24		31	40	48	54	61	67	73
26		38	49	58	67	75	82	89
28		46	59	70	81	90	99	108
30		55	71	84	96	108	119	128
32		65	83	99	114	127	140	153
34			98	116	133	149	164	178
36			112	134	154	172	189	205
38			129	154	177	198	217	236
40			147	176	201	225	248	268
42			167	199	228	255	280	304
44				225	258	288	317	344
46				252	288	323	355	385
48				280	321	359	394	428

Block indicates extent of basic data  
Aggregate difference in Bd. Ft. Table 0.24% low  
Average Individual Deviation: 13.6%

Based on 88 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.558 (\log. \text{D.B.H. inches}) + .612 (\log. \text{merch. ht. ft.}) - 1.774$$

Table can be extended by formula as follows:

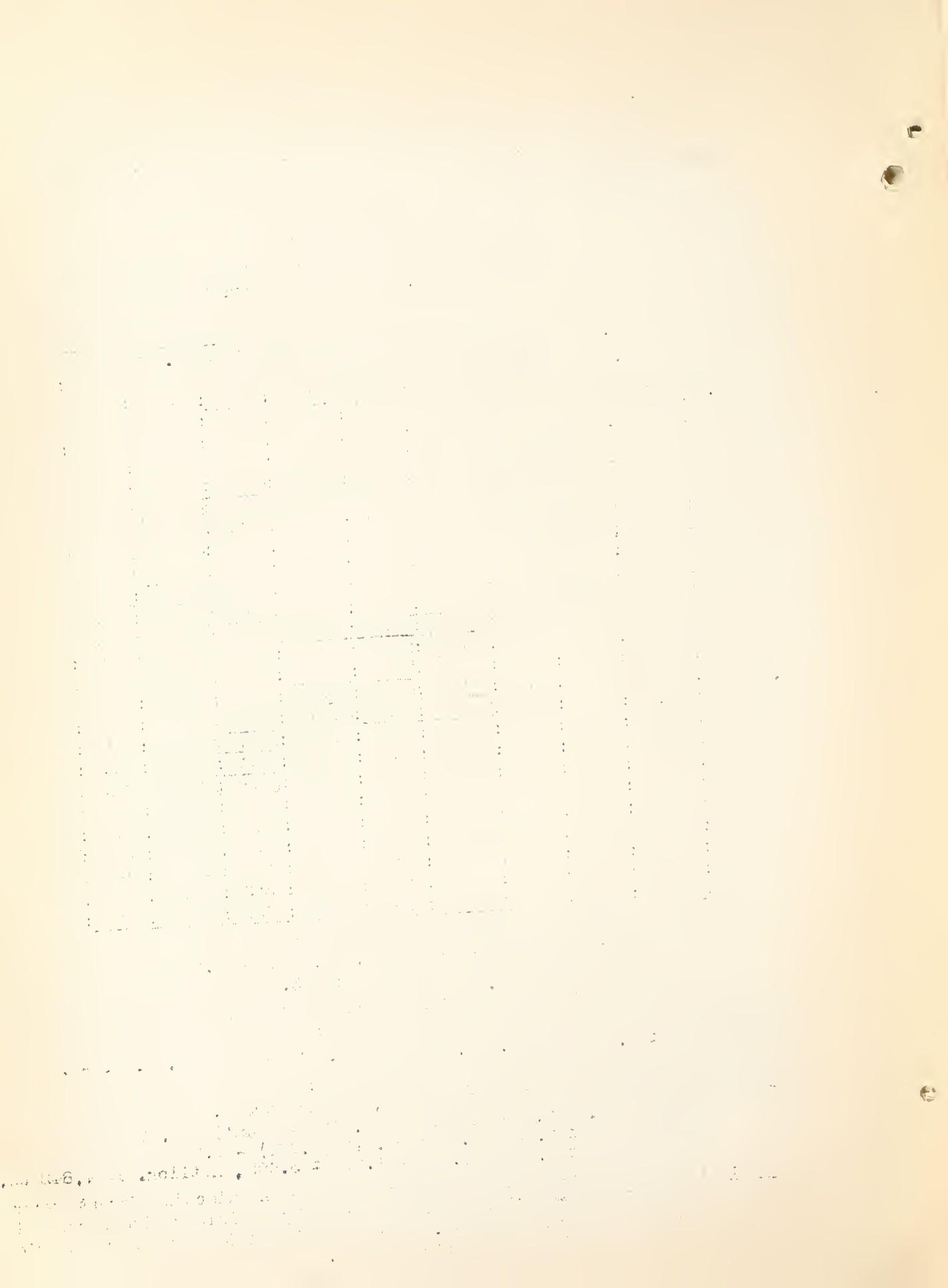
Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Vol.} = 2.558 (\log. 54") + .612 (\log. 48') - 1.774$$

$$V = 2.558 (1.732) + .612 (1.681) - 1.774$$

$$V = 4.450 + 1.029 - 1.774 = 3.685, \text{ Antilog. is } 4,842 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R-8. The table is subject to later revision through inclusion of additional data.



RS - AP

M-1

(S-Timber Surveys)

TABLE 3 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

WHITE OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

Gross volume in board feet (tens)					
D.B.H.: by 16 ft. log lengths	1/2	1	1 1/2	2	2 1/2
Inches:	10	12	14	16	18
:	:	:	:	:	:
:	2	3	4	5	6
:	10	12	14	16	18
:	12	13	15	17	19
:	14	16	18	20	22
:	16	18	20	22	24
:	18	20	22	24	26
:	20	22	24	26	28
:	22	24	26	28	30
:	24	26	28	30	32
:	26	28	30	32	34
:	28	30	32	34	36
:	30	32	34	36	38
:	32	34	36	38	40
:	34	36	38	40	42
:	36	38	40	42	44
:	38	40	42	44	46
:	40	42	44	46	48
:	42	44	46	48	50
:	44	46	48	50	52
:	46	48	50	52	54
:	48	50	52	54	56
:	50	52	54	56	58
:	52	54	56	58	60
:	54	56	58	60	62
:	56	58	60	62	64
:	58	60	62	64	66
:	60	62	64	66	68
:	62	64	66	68	70
:	64	66	68	70	72
:	66	68	70	72	74
:	68	70	72	74	76
:	70	72	74	76	78
:	72	74	76	78	80
:	74	76	78	80	82
:	76	78	80	82	84
:	78	80	82	84	86
:	80	82	84	86	88
:	82	84	86	88	90
:	84	86	88	90	92
:	86	88	90	92	94
:	88	90	92	94	96
:	90	92	94	96	98
:	92	94	96	98	100
:	94	96	98	100	102
:	96	98	100	102	104
:	98	100	102	104	106
:	100	102	104	106	108
:	102	104	106	108	110
:	104	106	108	110	112
:	106	108	110	112	114
:	108	110	112	114	116
:	110	112	114	116	118
:	112	114	116	118	120
:	114	116	118	120	122
:	116	118	120	122	124
:	118	120	122	124	126
:	120	122	124	126	128
:	122	124	126	128	130
:	124	126	128	130	132
:	126	128	130	132	134
:	128	130	132	134	136
:	130	132	134	136	138
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:	148	150	152	154	156
:	150	152	154	156	158
:	152	154	156	158	160
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:	178	180	182	184	186
:	180	182	184	186	188
:	182	184	186	188	190
:	184	186	188	190	192
:	186	188	190	192	194
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:	216	218	220	222	224
:	218	220	222	224	226
:	220	222	224	226	228
:	222	224	226	228	230
:	224	226	228	230	232
:	226	228	230	232	234
:	228	230	232	234	236
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:	236	238	240	242	244
:	238	240	242	244	246
:	240	242	244	246	248
:	242	244	246	248	250
:	244	246	248	250	252
:	246	248	250	252	254
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:	250	252	254	256	258
:	252	254	256	258	260
:	254	256	258	260	262
:	256	258	260	262	264
:	258	260	262	264	266
:	260	262	264	266	268
:	262	264	266	268	270
:	264	266	268	270	272
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:	268	270	272	274	276
:	270	272	274	276	278
:	272	274	276	278	280
:	274	276	278	280	282
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:	286	288	290	292	294
:	288	290	292	294	296
:	290	292	294	296	298
:	292	294	296	298	300
:	294	296	298	300	302
:	296	298	300	302	304
:	298	300	302	304	306
:	300	302	304	306	308
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:	306	308	310	312	314
:	308	310	312	314	316
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:	314	316	318	320	322
:	316	318	320	322	324
:	318	320	322	324	326
:	320	322	324	326	328
:	322	324	326	328	330
:	324	326	328	330	332
:	326	328	330	332	334
:	328	330	332	334	336
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:	342	344	346	348	350
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:	346	348	350	352	354
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:	350	352	354	356	358
:	352	354	356	358	360
:	354	356	358	360	362
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:	362	364	366	368	370
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:	366	368	370	372	374
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:	462	464	466	468	470
:	464	466	468	470	472
:	466	468	470	472	474
:	468	470	472	474	476
:	470	472	474	476	478
:	472	474	476	478	480
:	474	476	478	480	482
:	476	478	480	482	484
:	478	480	482	484	486
:	480	482	484	486	488
:	482	484	4		



RS - AP

M-1

(S-Timber Surveys)

## TABLE 4 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

N. RED OAK - SITE II  
Nantahala National Forest.

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)								
	by 16 ft. log lengths.								
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	
10	2	3	4	5					
12	3	5	6	8	9				
14	4	7	10	12	14	15			
16	6	10	13	16	19	21			
18		13	18	21	25	28	31		
20		17	25	28	32	37	41	45	
22		22	29	35	41	46	51	56	
24		27	36	43	51	57	64	70	
26		35	44	53	62	70	78	85	
28		39	52	63	74	84	93	102	
30			62	75	88	99	110	121	
32			72	88	103	116	129	142	
34			84	103	120	136	151	165	
36			96	118	137	155	173	189	
38			110	135	157	178	198	216	
40			125	152	177	201	224	245	
42			141	171	200	226	252	276	
44				193	225	255	284	310	Computed
46				215	251	284	316	346	by CRR
48				238	278	315	350	383	Checked

by JHS

Block indicates extent of basic data

Aggregate difference: Table 0.34% low  
Average individual deviation: 9.91%

Based on 129 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.456 (\log \text{d.b.h., inches}) + 0.686 (\log \text{merch. ht. ft.}) - 1.784$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.456 (\log 54) + 0.686 (\log 48) - 1.784$$

$$V = 2.456 (1.732) + 0.686 (1.681) - 1.784$$

$$V = 4.254 + 1.153 - 1.784 = 3.623, \text{ Antilog is } 4198 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP

M-1

(S-Timber Surveys)

TABLE 5 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK OAK - SITE II  
Nantahala National ForestTrees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)								
	by 16 ft. log lengths								
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	
10	2	3	4	5					
12	3	5	6	8	10				
14	4	7	10	12	14	16	18		
16	6	10	13	17	20	23	25		
18		13	18	22	26	30	34	38	
20		17	23	29	34	40	44	49	
22		22	29	37	44	50	56	62	
24		27	37	46	54	62	70	78	
26			45	56	66	76	86	95	
28			54	67	80	92	103	114	
30			64	80	95	109	122	136	
32			75	94	111	128	144	160	
34			88	110	130	149	168	186	
36			101	126	149	172	193	214	
38			116	144	171	197	222	246	
40			131	164	194	224	252	279	Computed by BF
42			148	185	219	252	284	315	Checked
44				209	248	285	320	355	by CRR

Block indicates extent of basic data

Aggregate difference: Table 0.94% low

Average individual deviation: 12.0%

Based on 79 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. volume} = 2.500 (\log. \text{d.b.h., inches}) + 0.767 (\log. \text{merch. ht. ft.}) - 1.945$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.500 (\log. 54) + 0.767 (\log. 48) - 1.945$$

$$V = 2.500 (1.732) + 0.767 (1.681) - 1.945$$

$$V = 4.330 + 1.289 - 1.945 = 3.674, \text{ antilog. is } 4,721 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



TABLE 6 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)								
	by 16 ft. log lengths.								
	1	1½	2	2½	3	3½	4	4½	
: 10 :	3	4	6	7	18	20			
: 12 :	5	7	9	10					
: 14 :	7	10	12	15					
: 16 :	10	14	17	21	24	28			
: 18 :		18	23	28	32	37	41		
: 20 :		23	30	36	42	47	53		
: 22 :			37	45	52	59	66		
: 24 :			46	56	65	73	82		
: 26 :			56	67	78	89	100	110	
: 28 :			67	81	94	107	119	131	
: 30 :				95	111	126	141	155	
: 32 :				111	129	147	164	182	
: 34 :				129	151	171	191	211	
: 36 :				148	172	195	219	241	
: 38 :				169	197	223	250	275	
: 40 :				191	222	253	282	311	
: 42 :				215	250	284	318	350	Computed
: 44 :					280	319	356	393	by BF
: 46 :					312	355	396	438	Checked
: 48 :					345	393	438	483	By JHS

Block indicates extent of basic data

Aggregate difference: Table 0.64% low  
Average individual deviation: 9.7%

Based on 86 stem measurements from which the following logarithmic formula was derived and used to construct the table:

$$\text{Log. Volume} = 2.417 (\log. \text{d.b.h., inches}) + 0.831 (\log. \text{merch. ht. ft.}) - 1.922$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. volume} = 2.417 (\log. 54) + 0.831 (\log. 48) - 1.922$$

$$V = 2.417 (1.732) + 0.831 (1.681) - 1.922$$

$$V = 4.186 + 1.397 - 1.922 = 3.661, \text{ antilog. is } 4,581 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

11. All the above are to be sent  
to you at my earliest convenience.

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(S-Timber Surveys)

TABLE 7 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

RED MAPLE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
D.B.H. :		by 16 ft. log lengths.									
Inches :		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4		
:	:	:	:	:	:	:	:	:	:	:	:
:	10	:	2	:	3	5	6				
:	12	:	3	:	5	7	9				
:	14	:	5	:	8	10	12	14	16		
:	16	:	6	:	10	14	17	20	22		
:	18	:		:	14	18	22	26	29	33	
:	20	:		:	17	23	28	33	38	42	
:	22	:		:	22	29	35	42	47	53	
:	24	:		:	27	36	44	51	58	65	
:	26	:		:	43	53	62	70	78	86	
:	28	:		:	51	62	73	83	93	102	
:	30	:		:	60	73	86	98	109	120	
:	32	:		:	70	86	100	114	127	139	
:	34	:				99	116	132	147	161	
:	36	:				113	132	150	167	184	
:	38	:				128	150	172	190	209	
:	40	:				145	169	192	214	236	Computed
:	42	:				162	190	216	240	264	by BF
:	44	:				182	212	242	269	296	Checked
											by JHS

Block indicates extent of basic data

Aggregate difference: Table 0.70% low  
Average individual deviation: 12.9%

Based on 75 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.349 (\log. \text{d.b.h., inches}) + .705 (\log. \text{merch. ht. ft.}) - 1.664$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees

$$\text{Log. Volume} = 2.349 (\log. 54) + .705 (\log. 48) - 1.664$$

$$V = 2.349 (1.732) + .705 (1.681) - 1.664$$

$$V = 4.068 + 1.185 - 1.664 = 3.589 \text{ or Antilog. is } 3882 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National forests of Region 8. The table is subject to later revision through inclusion of additional data.

1920-1921  
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TABLE 8 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE II  
Nantahala National Forest.Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross Volume in board feet (tens)									
	by 16 ft. log lengths.									
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	
10	2	3	4	6	7					
12	3	5	7	9	10					
14	4	7	10	13	15	17				
16		10	14	17	21	24				
18		13	18	23	27	32	36			
20		17	24	30	35	41	46	51		
22		21	30	37	44	51	58	64	71	
24		26	36	46	55	63	71	79	87	
26		32	44	56	66	77	87	96	106	
28			53	66	79	92	104	115	126	
30			62	78	94	108	122	136	149	
32			73	91	109	126	143	158	174	
34			84	106	127	147	166	184	202	
36			96	121	145	168	189	210	231	
38			110	138	165	191	216	240	264	
40			124	156	187	216	244	272	298	

Computed by CRR

Block indicates extent of basic data

Checked by JHS

Aggregate difference: Table 1.36% low  
Average individual deviation: 9.79%

Based on 92 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.402 (\log. \text{d.b.h., inches}) + 0.796 (\log. \text{merch. ht. ft.}) - 1.852$$

Table can be extended by formula as follows:

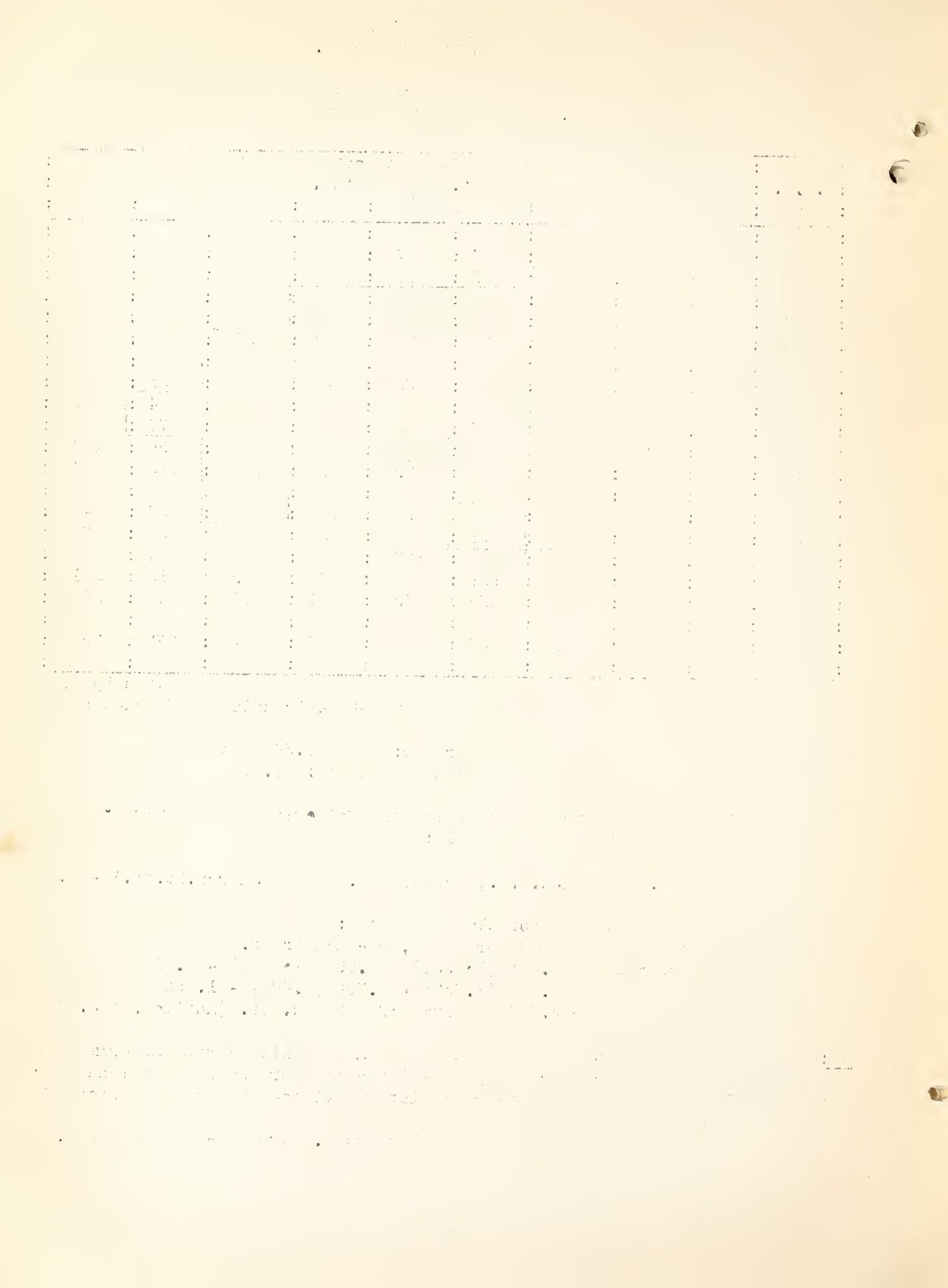
Example: Volume is desired for 3 log, 54-inch trees.

$$\text{Log. Volume} = 2.402 (\log. 54) + 0.796 (\log. 48) - 1.852$$

$$V = 2.402 (1.732) + 0.796 (1.681) - 1.852$$

$$V = 3.646 = \text{Volume of } 4426 \text{ bd. ft. (Antilog. of 3.646)}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



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TABLE 9 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)									
	by 16 ft. log lengths.									
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
10	2	3	4	6						
12	3	5	7	9	11					
14	4	7	10	12	15	18	20			
16		9	13	17	21	24	28	31		
18		12	17	22	27	32	37	41	46	
20		16	22	29	35	41	47	53	58	64
22		19	28	36	44	51	58	66	73	80
24			34	44	53	62	72	80	89	98
26			41	53	64	76	86	97	108	118
28			49	63	76	90	103	115	128	140
30										
32				57	74	90	105	120	136	150
34				66	86	104	122	140	157	175
36				77	99	120	141	162	182	201
				87	112	137	161	184	207	229

(Computed by CRR  
(Checked by JHS

Block indicates extent of basic data

Aggregate difference: Table 1.06% low

Average individual deviation: 10.69%

Based on 97 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.326 (\log. \text{d.b.h., inches}) + 0.880 (\log. \text{merch. ht., ft.}) - 1.893$$

Table can be extended by formula as follows:

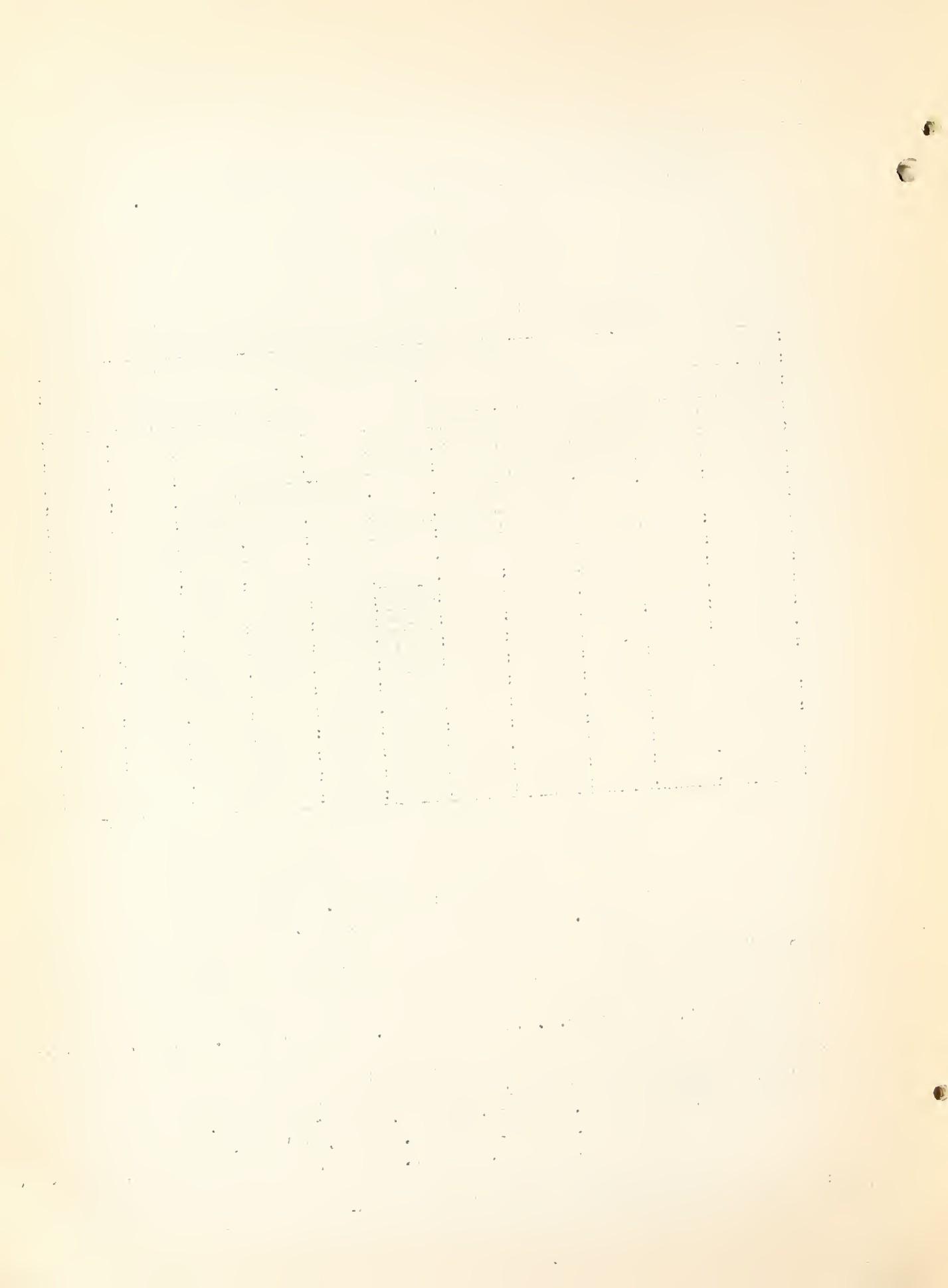
Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. volume} = 2.326 (\log. 54) + 0.880 (\log. 48) - 1.893$$

$$V = 2.326 (1.732) + 0.880 (1.681) - 1.893$$

$$V = 4.029 + 1.479 - 1.893 = 3.615, \text{ Antilog. is } 4,121 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



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TABLE 10 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)							
	by 16 ft. log lengths							
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
10	2	3	5	6				
12	3	5	7	9	11			
14	4	7	10	13	15	18		
16	5	10	14	17	21	24		
18		13	18	23	27	32	37	
20		16	23	29	35	41	47	
22		20	28	36	44	51	58	
24			34	44	53	62	71	
26			42	53	64	75	86	
28			49	63	76	89	101	
30				74	89	104	119	
32				86	104	121	138	

Computed by  
CRR  
Checked by  
BF

Block indicates extent of basic data

Aggregate difference: Table 2.14% low  
Average individual deviation: 13.31%

Based on 61 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.311 (\log. \text{d.b.h., inches}) + 0.852 (\log. \text{merch. ht. ft.}) - 1.827$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

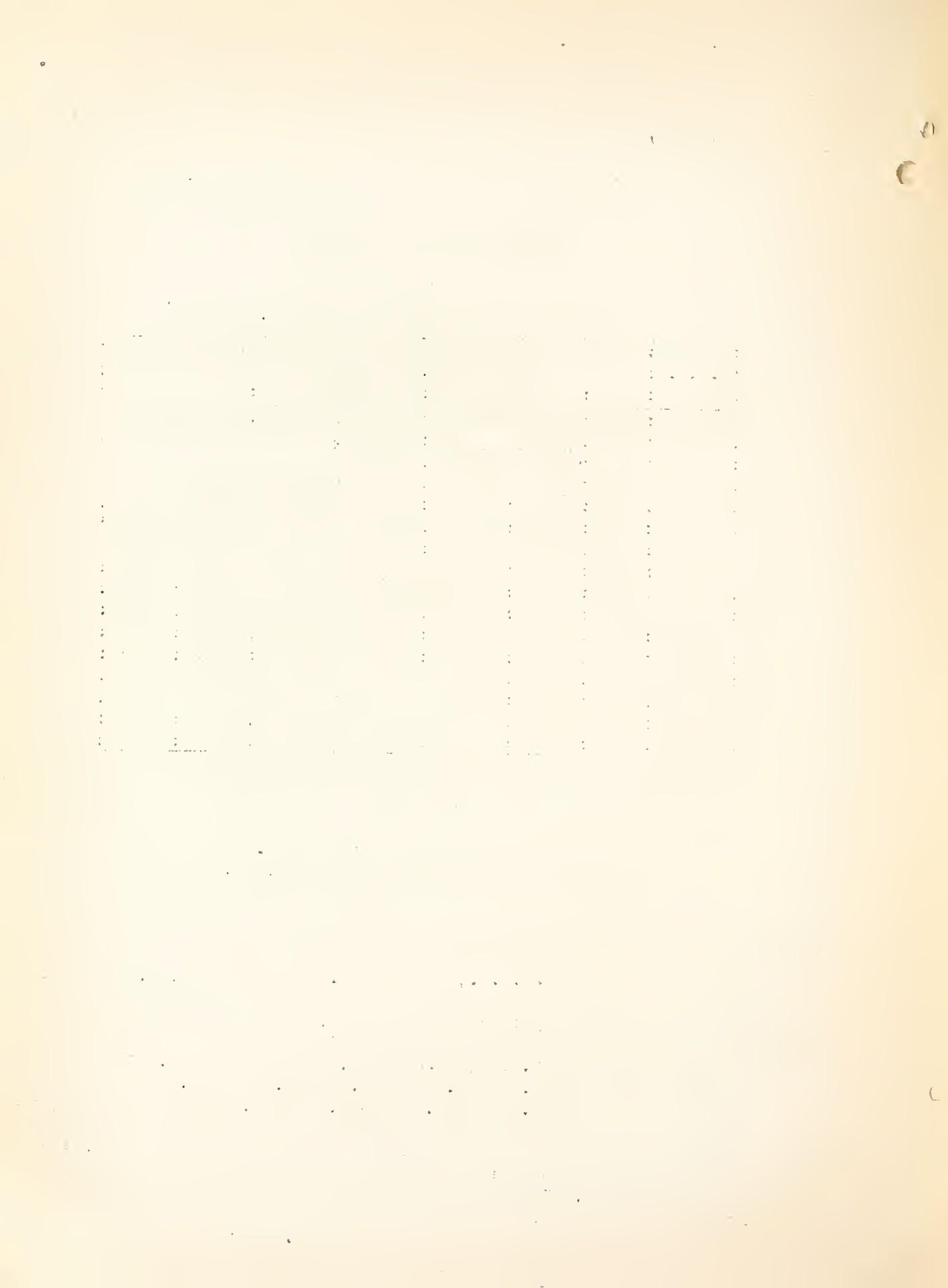
$$\text{Log. Volume} = 2.311 (\log. 54) + 0.852 (\log. 48) - 1.827$$

$$V = 2.311 (1.732) + 0.852 (1.681) - 1.827$$

$$V = 4.003 + 1.432 - 1.827 = 3.608, \text{ Antilog. is } 4,055 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936



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TABLE 11 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)											
	by 16 ft. log lengths											
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5	$5\frac{1}{2}$	
10	2	3	4	6	7							
12	3	5	7	9	10	12	14	15				
14	4	8	10	13	16	18	21	23	25			
16		10	15	18	22	25	29	32	36			
18		14	20	25	30	35	39	44	48	52		
20												
22		19	26	33	39	46	52	57	63	69		
24		24	33	42	50	58	66	73	81	88	95	
26			42	52	63	73	82	92	101	110	119	
28			51	65	77	90	101	113	124	136	146	
30			62	78	94	108	123	137	150	164	177	
32				74	93	112	129	147	163	180	196	211
34					110	132	153	173	193	212	231	250
36					129	155	180	203	226	249	271	293
					149	179	207	234	261	287	313	338

Block indicates extent of basic data

(Computed by BF  
(Checked by CRR

Aggregate difference: Table 1.11% low

Average individual deviation: 11.3%

Based on 135 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.579 (\log \text{d.b.h., inches}) + 0.809 (\log \text{merch. ht., ft.}) - 2.057$$

Table can be extended by formula as follows:

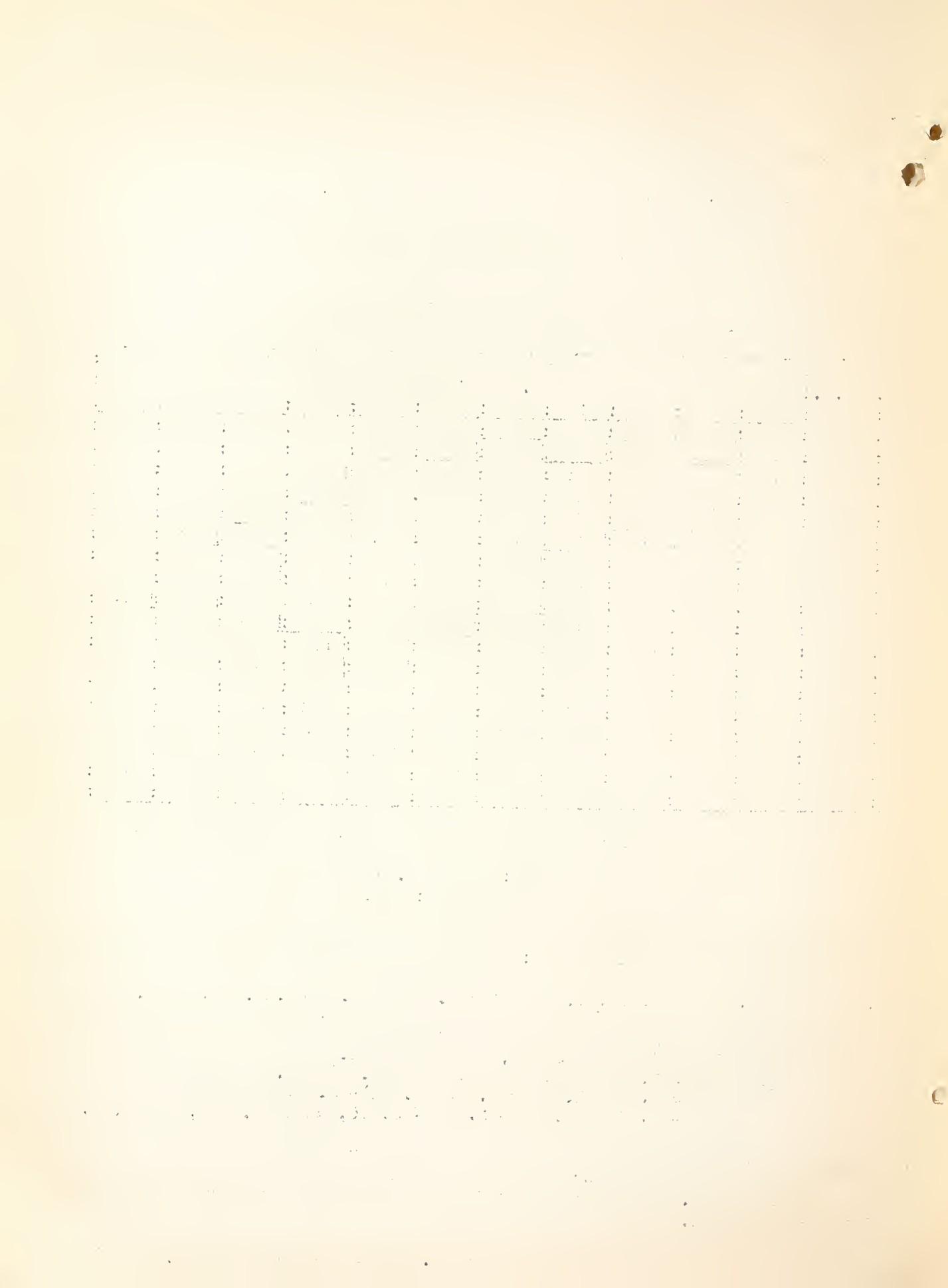
Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Volume} = 2.579 (\log .54) + 0.809 (\log .48) - 2.057$$

$$V = 2.579 (1.752) + 0.809 (1.681) - 2.057$$

$$V = 4.467 + 1.360 - 2.057 = 3.770, \text{ antilog is } 5,888 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



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TABLE 12 - BOARD FOOT VOLUME TABLE - SCRIBER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)								
	by 16 ft. log lengths								
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	
10	2	3	4	5					
12	3	5	7	9	10				
14	4	7	10	13	16	18			
16	6	11	15	18	22	26	29		
18		14	20	25	30	35	40	44	
20		19	27	34	40	46	52	58	
22		25	34	43	51	59	67	75	
24		31	43	54	65	75	85	94	
26		38	53	67	80	93	105	117	
28			65	82	98	113	128	142	
30									
32									Computed
34									by CRR
36									Checked
									by BF

Block indicates extent of basic data

Aggregate difference: Table is 0.3% low

Average individual deviation: 11.96%

Based on 83 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.650 (\log. \text{d.b.h., inches}) + 0.802 (\log. \text{merch. ht. ft.}) - 2.130$$

Table can be extended by formula as follows:

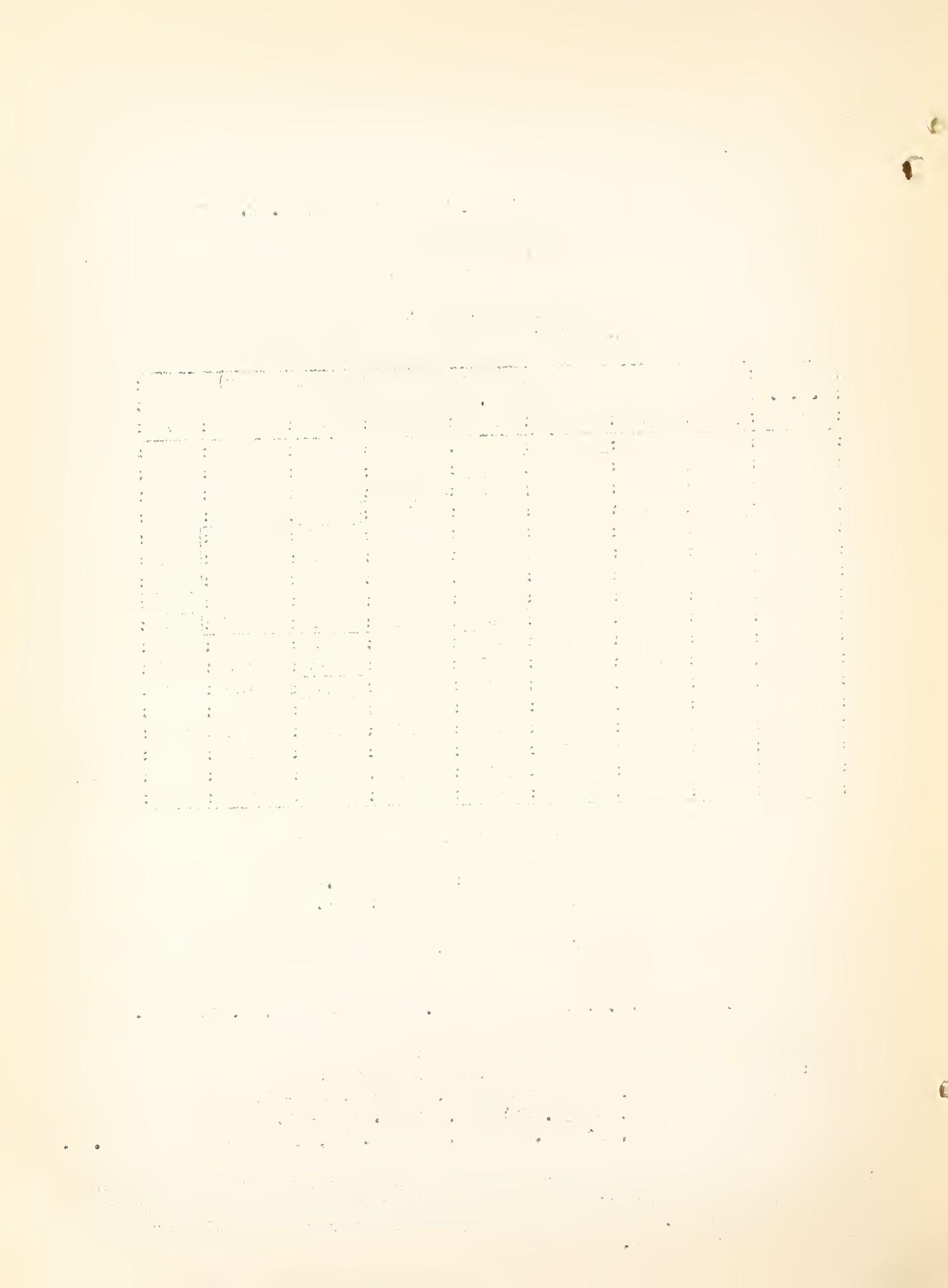
Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.650 (\log. 54) + 0.802 (\log. 48) - 2.130$$

$$V = 2.650 (1.732) + 0.802 (1.681) - 2.130$$

$$V = 4.590 + 1.348 - 2.130 = 3.808, \text{ Antilog. is } 6,427 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



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TABLE 13 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

VIRGINIA PINE - SITE II  
Cherokee National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)							
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
8	1	2	2					
10	2	3	4	5	6	7		
12	3	5	7	8	10	11	13	
14	4	7	10	12	14	16	18	20
16	6	10	13	16	20	22	25	28
18	8	13	18	22	26	30	33	37
20	10	17	23	28	33	38	43	48
22		21	28	35	42	48	54	60
24		26	35	44	52	59	67	74

Computed by BF  
Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 1.44% low  
Average individual deviation: 10.5%

Based on 66 stem measurements from which the following logarithmic formula was derived and used to construct the table:

$$\text{Log. Volume} = 2.404 (\log. \text{d.b.h.}, \text{inches}) + 0.762 (\log. \text{merch. ht. ft.}) - 1.825$$

Table can be extended by formula as follows:

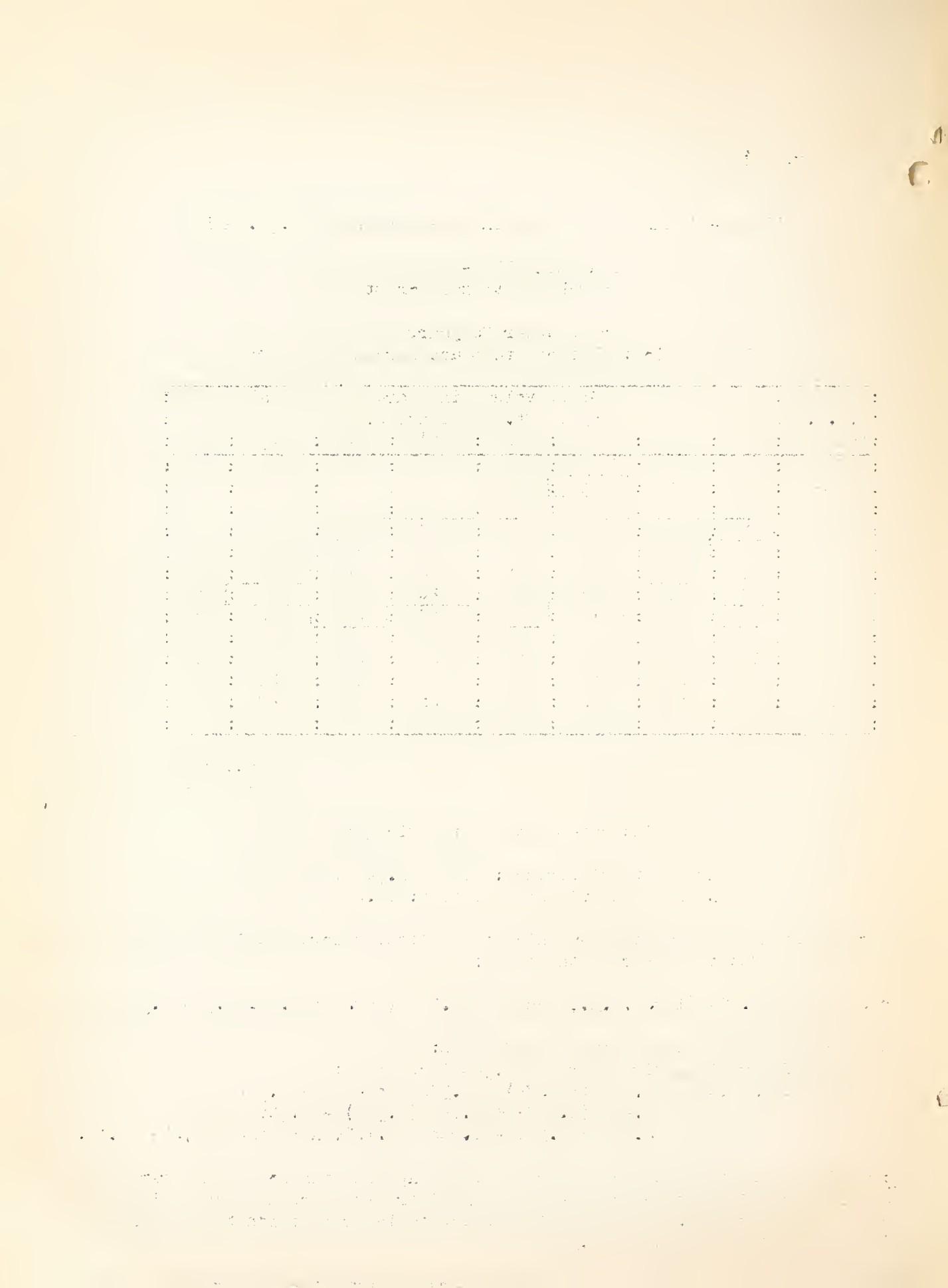
Example: Volume is desired for 3 log, 36 inch trees:

$$\text{Log. volume} = 2.404 (\log. 36) + 0.762 (\log. 48) - 1.825$$

$$V = 2.404 (1.556) + 0.762 (1.681) - 1.825$$

$$V = 3.741 + 1.281 - 1.825 = 3.197, \text{ Antilog. is } 1,574 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through the inclusion of additional data.



RS - AP

M-1

(S-Timber Surveys)

TABLE 14 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE I

Pisgah National Forest.

Trees over 75 years old.

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)											
D.B.H. :		by 16 ft. log lengths.											
Inches :	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5			
10	2	3	4	5									
12	2	4	6	7	9								
14	4	6	8	10	12	14							
16	5	8	11	14	17	19	22						
18	6	11	15	18	22	25	29	32					
20		14	19	23	28	32	36	40					
22		17	23	29	34	40	45	50	55				
24		20	28	35	42	48	55	61	67				
26		24	34	42	50	58	66	73	80	87			
28		40	50	60	69	78	86	95	103				
30		46	58	70	80	91	101	111	120				
32		54	67	80	93	105	117	128	139				
34		62	78	93	107	121	134	148	160				
36			88	105	121	137	152	167	182				
38			100	119	137	155	173	189	206				
40			112	134	154	174	194	212	231				
42			125	149	172	194	216	237	258				
44			139	166	192	217	241	264	288				
46			154	184	212	239	266	292	318				
48				201	233	263	292	321	348				
50				221	256	288	321	352	383				
52				242	279	316	351	385	419				
54				263	303	343	381	418	455				
56				286	330	372	414	455	494				
58				309	356	403	448	492	535				
60				334	386	436	484	532	578				

Block indicates extent of basic data

(Computed by CRR)

(Checked by BF)

Aggregate difference: Table is 1.41% high

Average individual deviation: 12.56%

Based on 214 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.263 (\log. \text{d.b.h.}, \text{inches}) + 0.791 (\log. \text{merch. ht. ft.}) - 1.767$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 64 inch trees:

$$\text{Log Volume} = 2.263 (\log. 64) + 0.791 (\log. 48) - 1.767$$

$$V = 2.263 (1.806) + 0.791 (1.681) - 1.767$$

$$V = 4.087 + 1.330 - 1.767 = 3.650, \text{ Antilog. is } 4,467 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R. 8. The table is subject to later revision through inclusion of additional data.



RS - A.P  
M-1  
(S-Timber Surveys)

TABLE 15 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE II  
Pisgah National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)										
D.B.H.		by 16 ft. log lengths.										
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4			
10		2	3	4	4							
12		2	4	6	7	8						
14		4	6	8	10	12	13					
16		5	8	11	14	16	18					
18			11	14	18	21	24	27				
20			14	18	23	27	31	34	38			
22			17	23	28	34	38	43	47			
24			21	28	35	41	47	52	58			
26				34	42	50	57	63	70			
28				41	50	59	67	75	83			
30				48	59	70	79	89	98			
32					56	69	81	92	103	114		
34					65	80	94	107	120	132		
36						91	107	122	136	150		
38						103	122	139	155	171		
40						116	137	156	175	192		
42							130	153	175	196	216	Computed
44							146	172	196	220	242	by CRR
46							162	191	218	243	268	Checked
48							179	210	240	268	296	by BF

Block indicates extent of basic data

Aggregate difference: Table 1.91% high  
Average individual deviation: 12.97%

Based on 91 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.354 (\log. \text{d.b.h., inches}) + 0.725 (\log. \text{merch. ht. ft.}) - 1.796$$

Table can be extended by formula as follows:

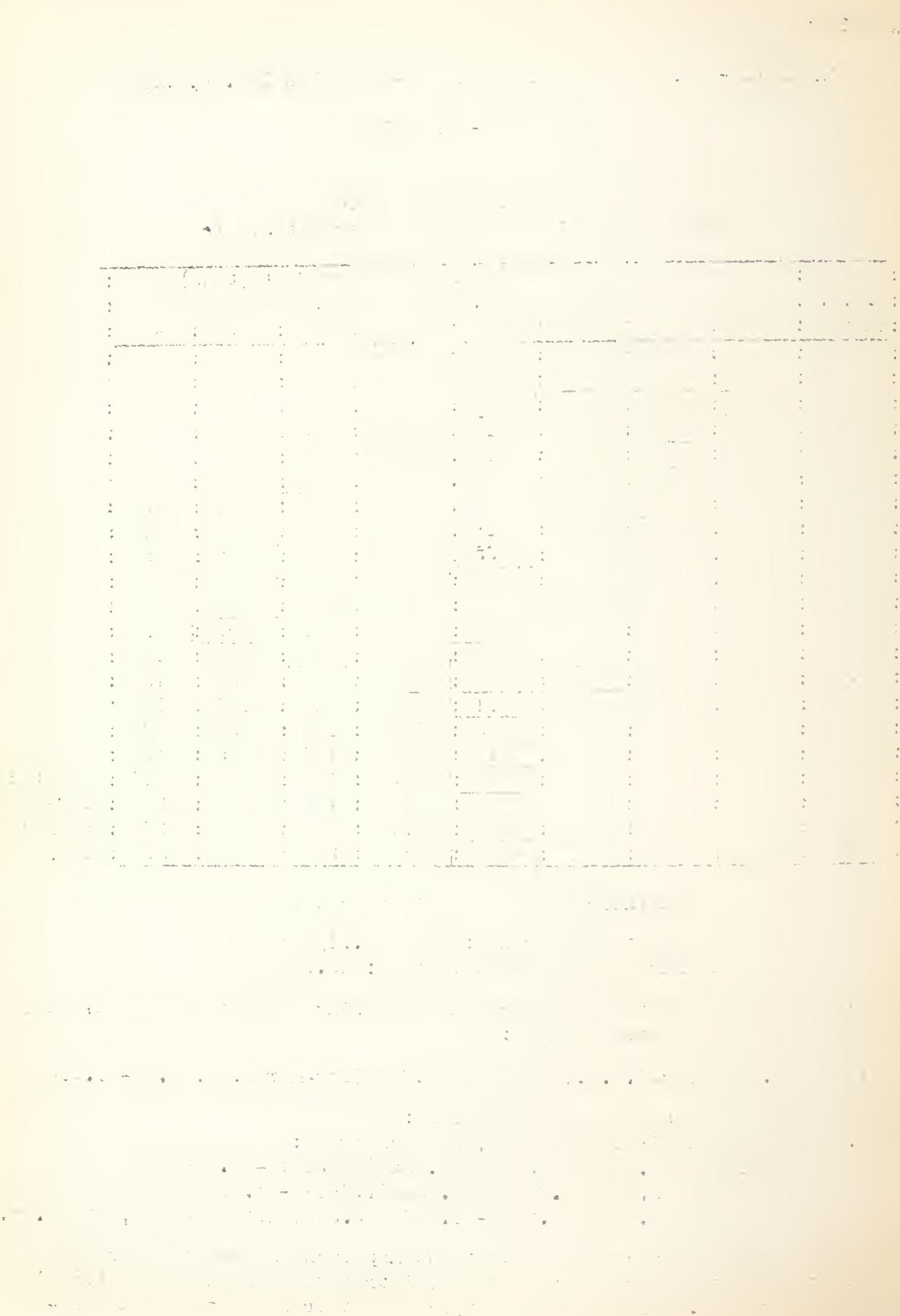
Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. volume} = 2.354 (\log. 54) + 0.725 (\log. 48) - 1.796$$

$$V = 2.354 (1.732) + 0.725 (1.681) - 1.796$$

$$V = 4.077 + 1.219 - 1.796 = 3.500, \text{ Antilog. is } 3,162 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 16 - BOARD FOOT VOLUME TABLES - SCRIBNER DEC. C. RULE

SUGAR MAPLE - SITE I  
Pisgah National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)							
	by 16 foot log lengths.							
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4
10	2	3	4					
12	3	5	6	8				
14	4	7	9	11	12			
16	6	9	12	14	16	18		
18		12	15	18	21	24	26	
20		15	19	23	27	30	33	36
22		18	24	28	33	37	41	45
24			28	34	40	45	50	54
26			34	41	47	54	59	65
28			40	48	56	63	70	76
30			46	56	65	73	81	88
32			54	65	75	84	93	102
34			61	74	86	96	107	116
36				84	97	109	120	131
38				94	109	123	136	148
40				105	122	137	152	166
42					136	152	169	184 : Computed
44					151	169	188	205 : by CRR
46					166	187	206	225 : Checked
48					182	204	226	247 : by JHS

Block indicates extent of basic data

Aggregate difference: Table 1.60% low  
Average individual deviation: 17.7%

Based on 81 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.189 (\log \text{d.b.h., inches}) + 0.653 (\log \text{mech. ht. ft.}) - 1.467$$

Table can be extended by formula as follows:

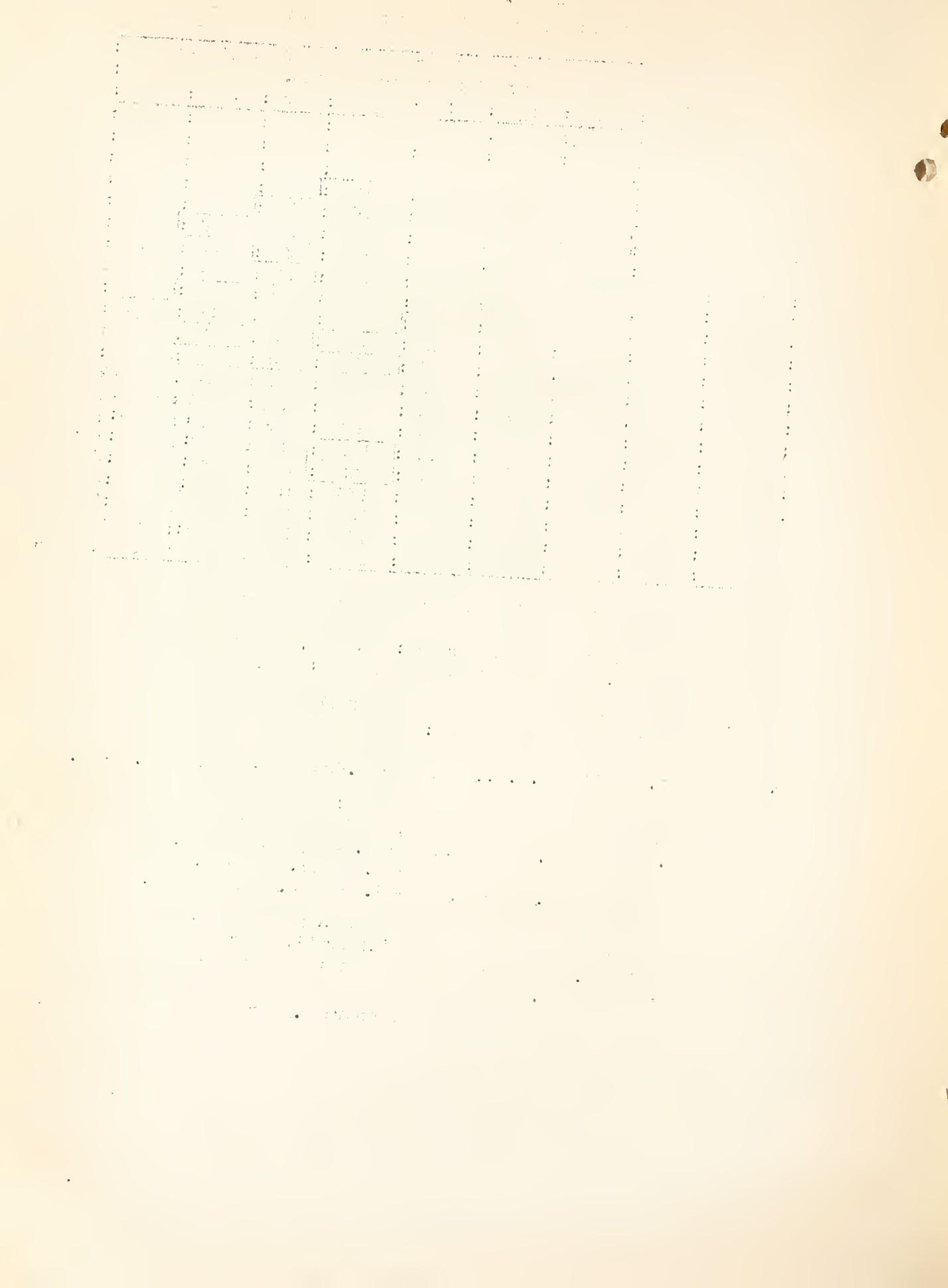
Example: Volume is desired for 3 log, 54 inch trees:

$$\text{Log. Volume} = 2.189 (\log 54) + 0.653 (\log 48) - 1.467$$

$$V = 2.189 (1.732) + 0.653 (1.681) - 1.467$$

$$V = 3.791 + 1.098 - 1.467 = 3.422, \text{ Antilog. is } 2,642 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 17 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE - SITE I  
Pisgah National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H.	Gross volume in board feet (tens)						
Inches	1	1 $\frac{1}{2}$	2	2 $\frac{1}{2}$	3	3 $\frac{1}{2}$	4
10	3	4	5				
12	4	6	7	8			
14	5	8	10	12	14	16	
16	7	10	13	16	18	21	24
18	9	13	17	20	24	27	31
20		16	21	26	30	34	38
22		20	26	31	37	42	47
24		24	31	38	44	51	57
26		29	37	45	52	60	67
28		34	43	52	61	70	79
30			50	61	71	82	92
32			57	70	82	94	105
34				80	93	107	120
36				90	105	120	135
							Computed by CRR
							Checked by BF

Block indicates extent of basic data

Aggregate difference: Table 0.34% low

Average individual deviation: 12.34%

Based on 66 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.142 (\log. \text{d.b.h., inches}) + 0.875 (\log. \text{merch. ht. ft.}) - 1.782$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 54 inch trees:

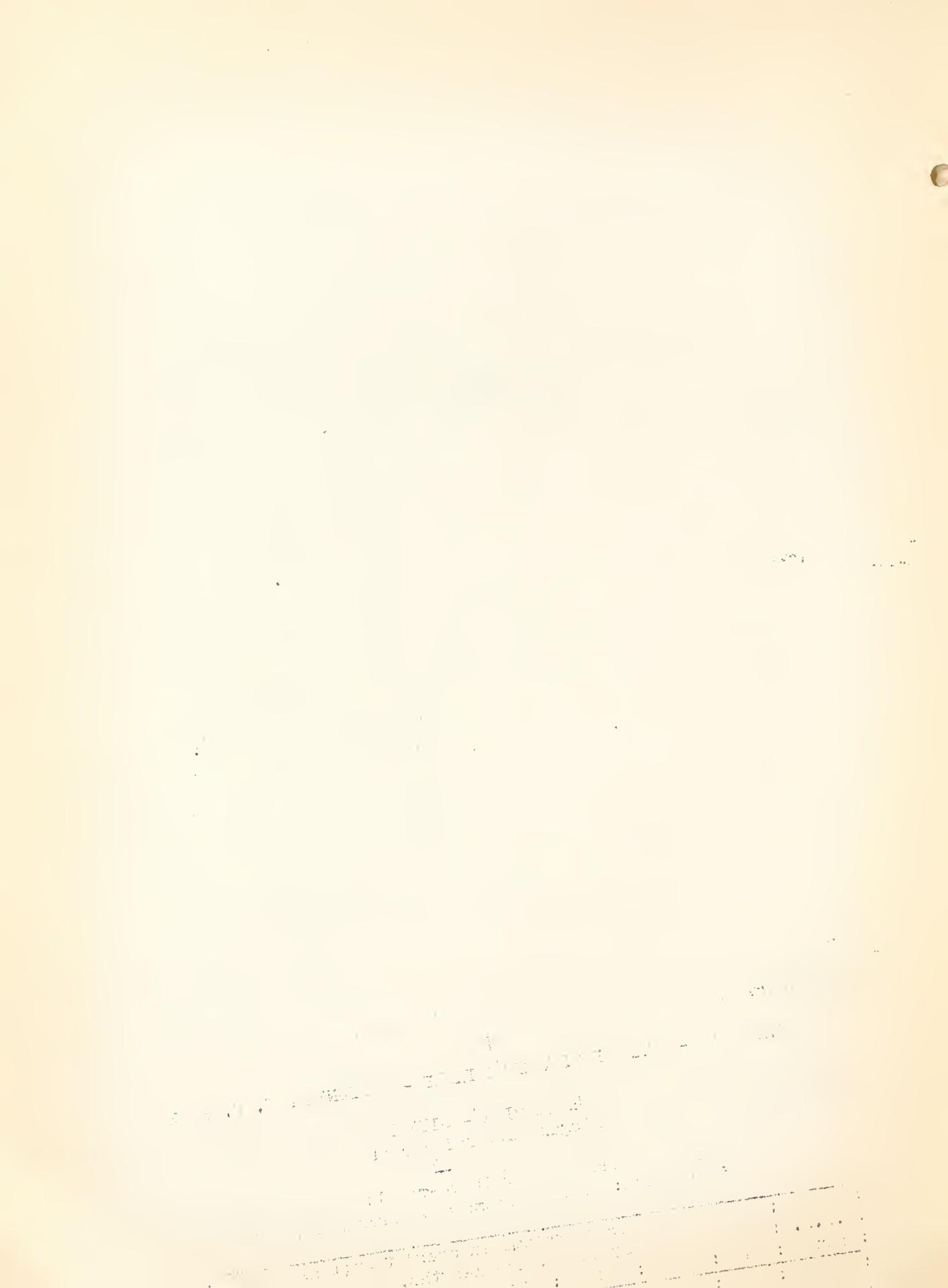
$$\text{Log. Volume} = 2.142 (\log. 54) + 0.875 (\log. 48) - 1.782$$

$$V = 2.142 (1.732) + 0.875 (1.681) - 1.782$$

$$V = 3.710 + 1.471 - 1.782 = 3.399, \text{ Antilog. is } 2,506 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 18 - BOARD FOOT VOLUME TABLE - SCRIBNER D.L.C. C. RULE

CHESTNUT OAK - SITE II  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
D.B.H.:		by 16 ft. log lengths.									
Inches:	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4			
:	:	:	:	:	:	:	:	:	:	:	:
:	10	2	3	3							
:	12	3	4	5	6						
:	14	4	6	8	10	11	13				
:	16	6	9	12	14	16	18	20			
:	18	8	12	16	19	22	25	27	30		
:	20	10	16	21	25	29	33	36	39		
:	22	13	21	27	32	37	42	46	50		
:	24	17	26	34	41	47	53	58	64		
:	26		33	42	51	58	66	72	79		
:	28		40	51	62	71	80	88	96		
:	30		48	62	74	85	96	106	115		
:	32		56	75	88	101	114	125	136		
:	34		66	86	103	119	134	148	161		
:	36			100	120	138	155	171	186		
:	38			115	139	160	180	198	215		
:	40			132	158	183	205	226	247	Computed by CRR	
:	42			150	180	208	233	257	280	Checked by BF	
:	44			205	236	265	292	318			

Block indicates extent of basic data

Aggregate difference: Table 0.25% high

Average individual deviation: 13.81%

Based on 80 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log Volume} = 2.648 (\log \text{d.b.h., inches}) + 0.637 (\log \text{merch.ht., ft.}) - 2.001$$

Table can be extended by formula as follows:

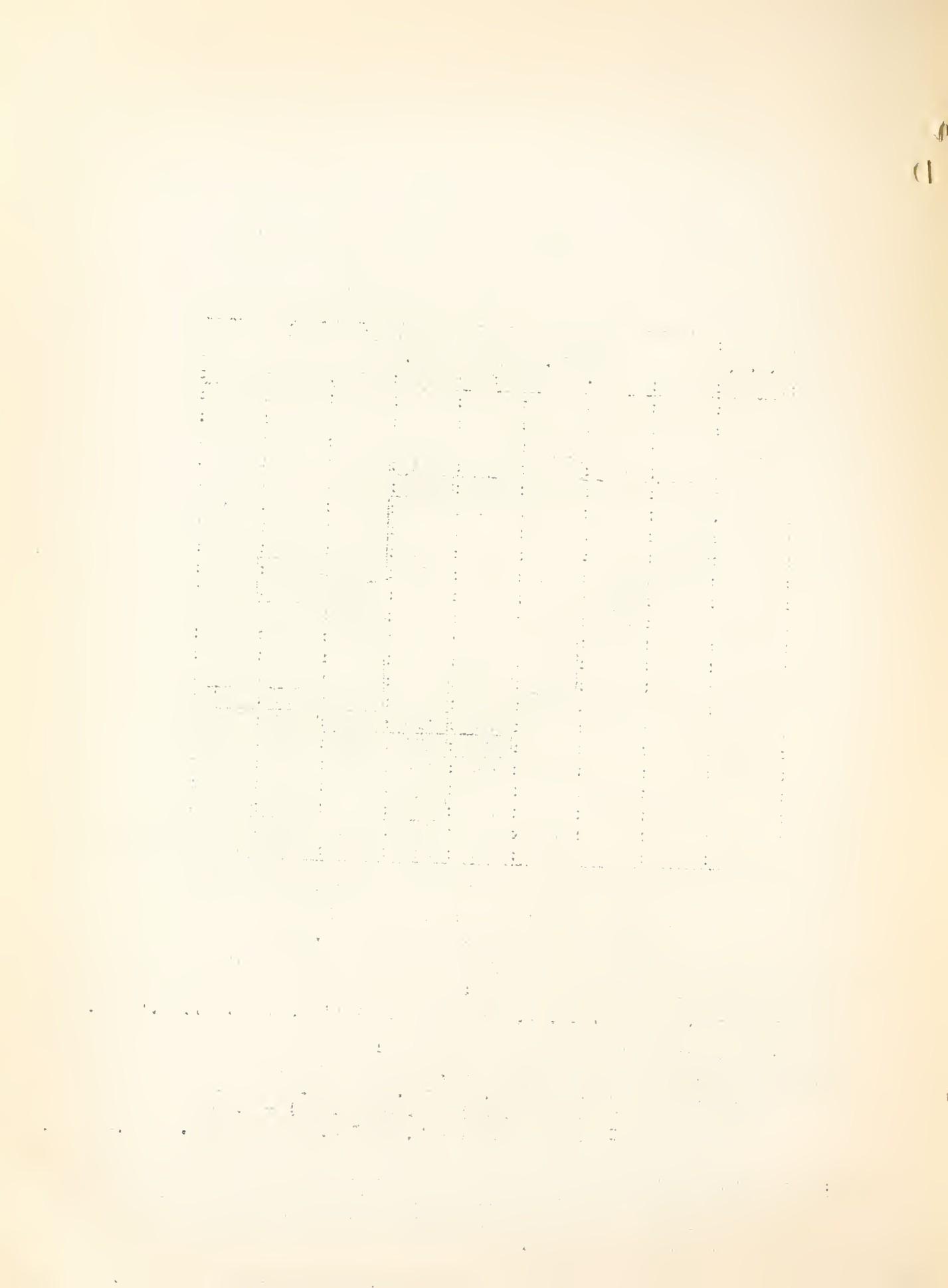
Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log.Volume} = 2.648 (\log .54) + 0.637 (\log .48) - 2.001$$

$$V = 2.648 (1.732) + 0.637 (1.681) - 2.001$$

$$V = 4.586 + 1.071 - 2.001 = 3.656, \text{ Antilog. is } 4,529 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AF

M-1

(S-Timber Surveys)

TABLE 19 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

## YELLOW POPLAR - SITE I

Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)											
D.B.H.:		by 16 ft. log lengths,											
Inches:		1	1½	2	2½	3	3½	4	4½	5			
:	:	:	:	:	:	:	:	:	:	:	:	:	:
:	10	:	3	:	4	:	4	:					
:	12	:	4	:	6	:	7	:	9	10	:		
:	14	:	6	:	9	:	11	:	13	15	:	17	19
:	16	:	9	:	12	:	15	:	18	21	:	24	26
:	18	:		:	17	:	21	:	25	28	:	32	36
:		:		:		:		:			:		
:	20	:		:	22	:	27	:	33	38	:	42	47
:	22	:		:	28	:	35	:	42	48	:	54	60
:	24	:		:	35	:	44	:	52	60	:	68	76
:	26	:		:		:	54	:	64	74	:	84	93
:	28	:		:		:	66	:	78	90	:	102	113
:		:		:		:		:			:		
:	30	:		:		:	78	:	93	108	:	121	135
:	32	:		:		:	93	:	110	127	:	144	160
:	34	:		:		:	109	:	130	150	:	169	188
:	36	:		:		:		:	150	173	:	195	216
:	38	:		:		:		:	173	200	:	225	250
:		:		:		:		:			:		
:	40	:		:		:		197	:	228	:	256	284
:	42	:		:		:			:	223	:	258	291
:	44	:		:		:			:	254	:	292	330
:	46	:		:		:			:	284	:	327	370
:	48	:		:		:			:		:	365	411
:	50	:		:		:			:		:	406	458
												508	557
													605

Block indicates extent of basic data

(Computed by CRR

Aggregate difference: Table 2.00% low

(Checked by BF

Average individual deviation: 14.91%

Based on 74 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log Volume} = 2.597 (\log \text{d.b.h., inches}) + 0.783 (\log \text{merch. ht., ft}) - 2.120$$

Table can be extended by formula as follows:

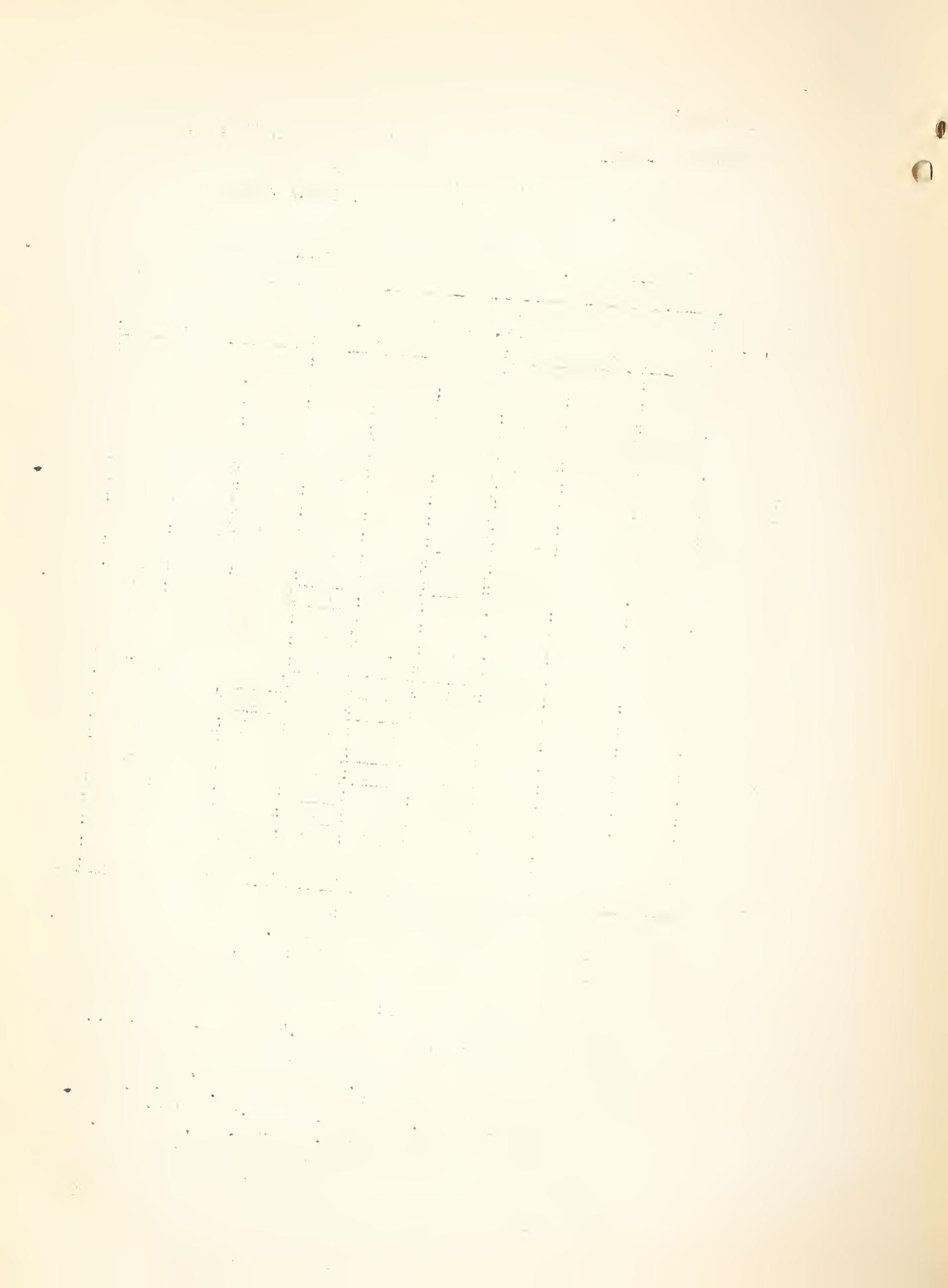
Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Volume} = 2.597 (\log .54) + 0.783 (\log .48) - 2.120$$

$$V = 2.597 (1.732) + 0.783 (1.681) - 2.120$$

$$V = 4.498 + 1.316 - 2.120 = 3.694, \text{ Antilog. is } 4,943 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.



RS - AP  
M - 1  
(S-Timber Surveys)

Table 20 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C RULE

SCARLET OAK - SITE III

Nantahala and Cherokee National Forests  
Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens):					
D.B.H.		by 16 ft. log lengths.					
Inches		$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
:	:	:	:	:	:	:	:
:	10	2	3	4			
:	12	3	5	7	8		
:	14	4	7	9	12	14	
:	16	6	9	13	16	19	22
:	18	7	13	17	22	26	30
:	20	9	16	22	28	33	38
:							
:	22	12	20	28	35	42	48
:	24	15	25	35	43	51	59
:	26		31	42	52	62	72
:	28			50	63	75	86
:	30			59	74	88	101
:							
:	32			69	86	103	119
:	34			80	100	119	137
:	36			91	115	136	157
							Computed by BF
							Checked by CRR

Block indicates extent of basic data

Aggregate difference: Table 1.1% low  
Average individual deviation; 9.99%

Based on 80 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.401 (\log. \text{d.b.h.}, \text{inches}) + 0.780 (\log. \text{merch. ht. ft.}) - 1.851$$

Table can be extended by formula as follows:

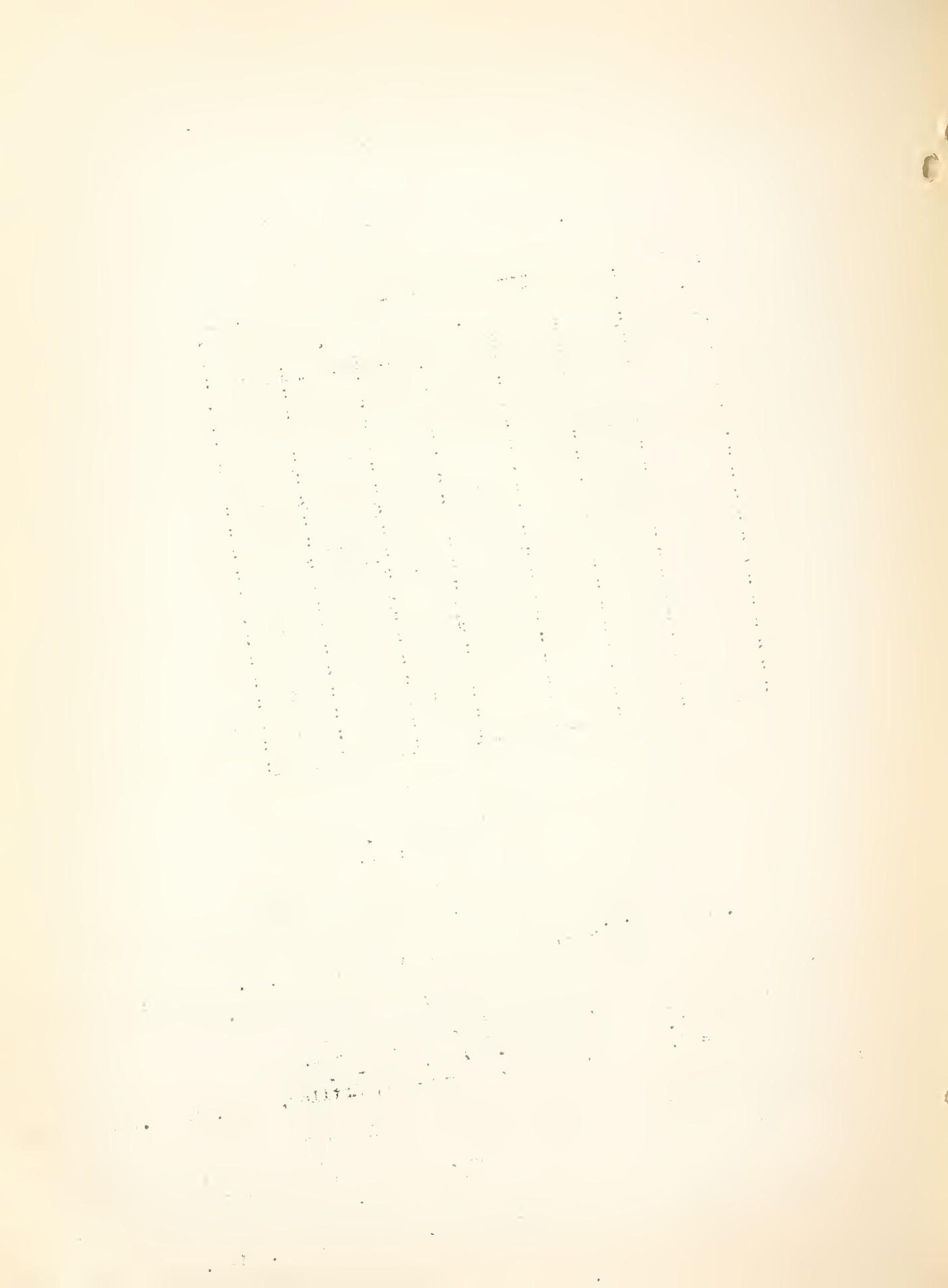
Example: Volume is desired for 3 log, 54 inch trees.

$$\text{Log. Vol.} = 2.401 (\log. 54) + 0.780 (\log. 48) - 1.851$$

$$\text{" " } = 2.401 (1.732) + 0.780 (1.681) - 1.851$$

$$\text{" " } = 4.159 + 1.311 - 1.851 = 3.619, \text{ Antilog. is } 4,159 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of R-8. The table is subject to later revision through use of additional data.



RS - AP

M-1

(S-Timber Surveys)

TABLE 21 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE I  
Pisgah and Nantahala National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)											
	by 16 ft. log lengths											
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5		
10	1	2	3	4								
12	2	4	5	7	8							
14	3	6	8	10	12	14	16					
16	4	8	11	14	17	20	23	26				
18		11	15	20	24	28	31	35				
20		14	20	26	31	36	42	47	52			
22			26	33	40	47	54	60	66			
24			33	42	51	59	68	76	84	92		
26			41	52	63	75	84	94	104	114		
28			49	63	76	89	102	114	126	138		
30				76	92	107	122	137	152	166		
32				90	109	127	145	163	180	197		
34				106	128	150	171	192	212	232		

(Computed by BF  
(Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 2.31% low

Average individual deviation: 14.0%

Based on 61 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.662 (\log \text{d.b.h., inches}) + 0.855 (\log \text{merch. ht., ft.}) - 2.339$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 40 inch trees:

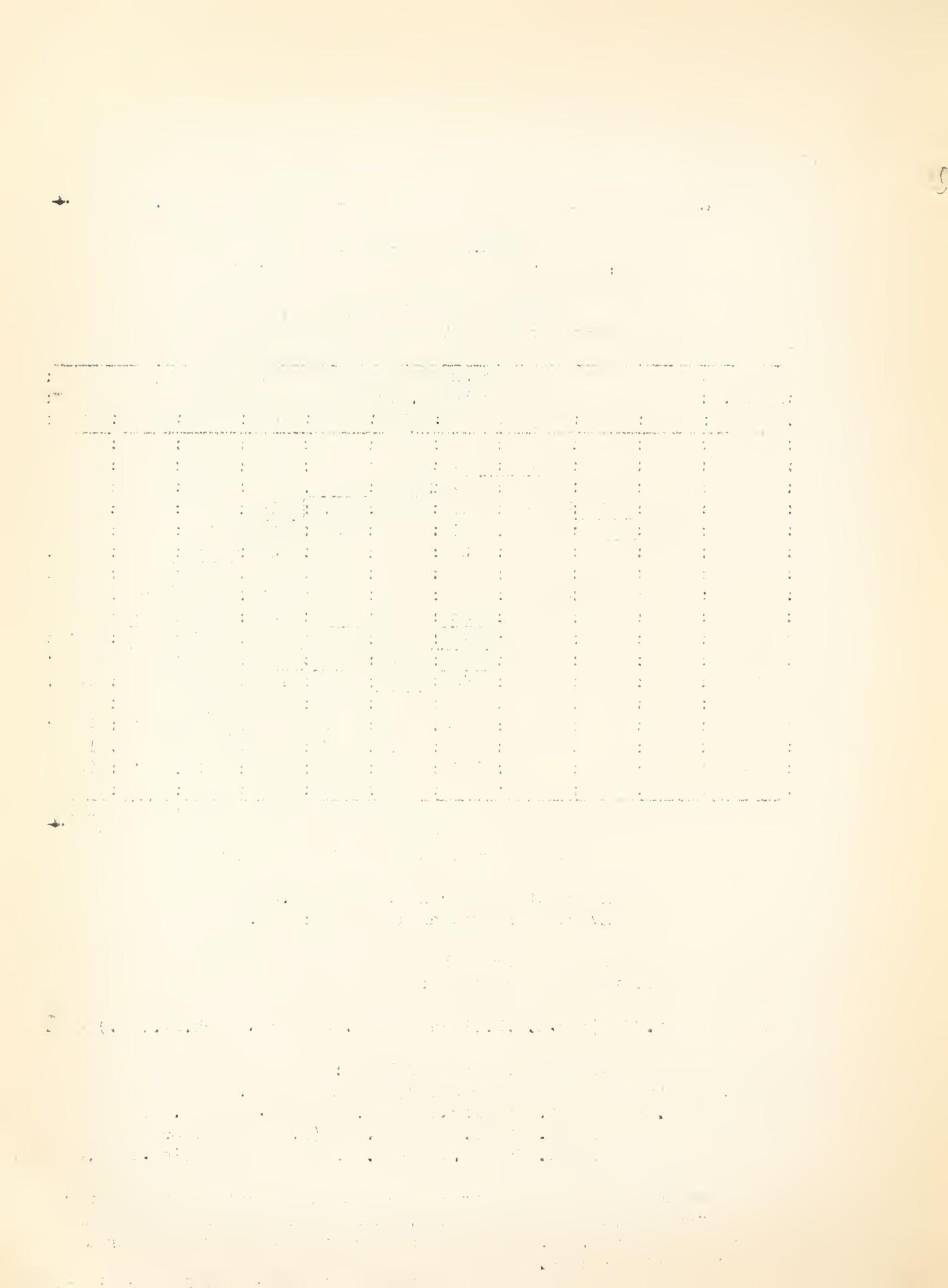
$$\text{Log. Volume} = 2.662 (\log .40) + 0.855 (\log .48) - 2.339$$

$$V = 2.662 (1.602) + 0.855 (1.681) - 2.339$$

$$V = 4.265 + 1.437 - 2.339 = 3.363, \text{ Antilog. is } 2,307 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.



RS - AP

M-1

(S-Timber Surveys)

TABLE 22 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE ASH\*

Pisgah and Nantahala National Forests

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

D.B.H. Inches	Gross volume in board feet (tens)									
	by 16 ft. log lengths.									
	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4	$4\frac{1}{2}$	5
10	2	3	4	5						
12	3	5	6	8	9	10				
14	5	7	10	12	14	15				
16	7	11	14	17	20	22	24	27		
18	9	15	19	23	27	30	34	37		
20		20	26	31	36	41	45	49	53	
22			33	40	47	53	58	64	69	
24				51	60	67	74	81	88	
26				64	74	84	93	101	109	
28				78	90	103	114	124	134	
30				95	110	124	137	150	162	174
32				113	131	148	164	179	193	208
34				134	156	175	194	212	229	246
36				156	181	204	226	247	267	286

(Computed by BF

(Checked by PEL

Block indicates extent of basic data

Aggregate difference: Table 0.17% high

Average individual deviation: 15.0%

Based on 68 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log. Volume} = 2.745 (\log. \text{d.b.h., inches}) + 0.662 (\log. \text{merch. ht., ft.}) - 2.074$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 40 inch trees.

$$\text{Log. Volume} = 2.745 (\log. 40) + 0.662 (\log. 48) - 2.074$$

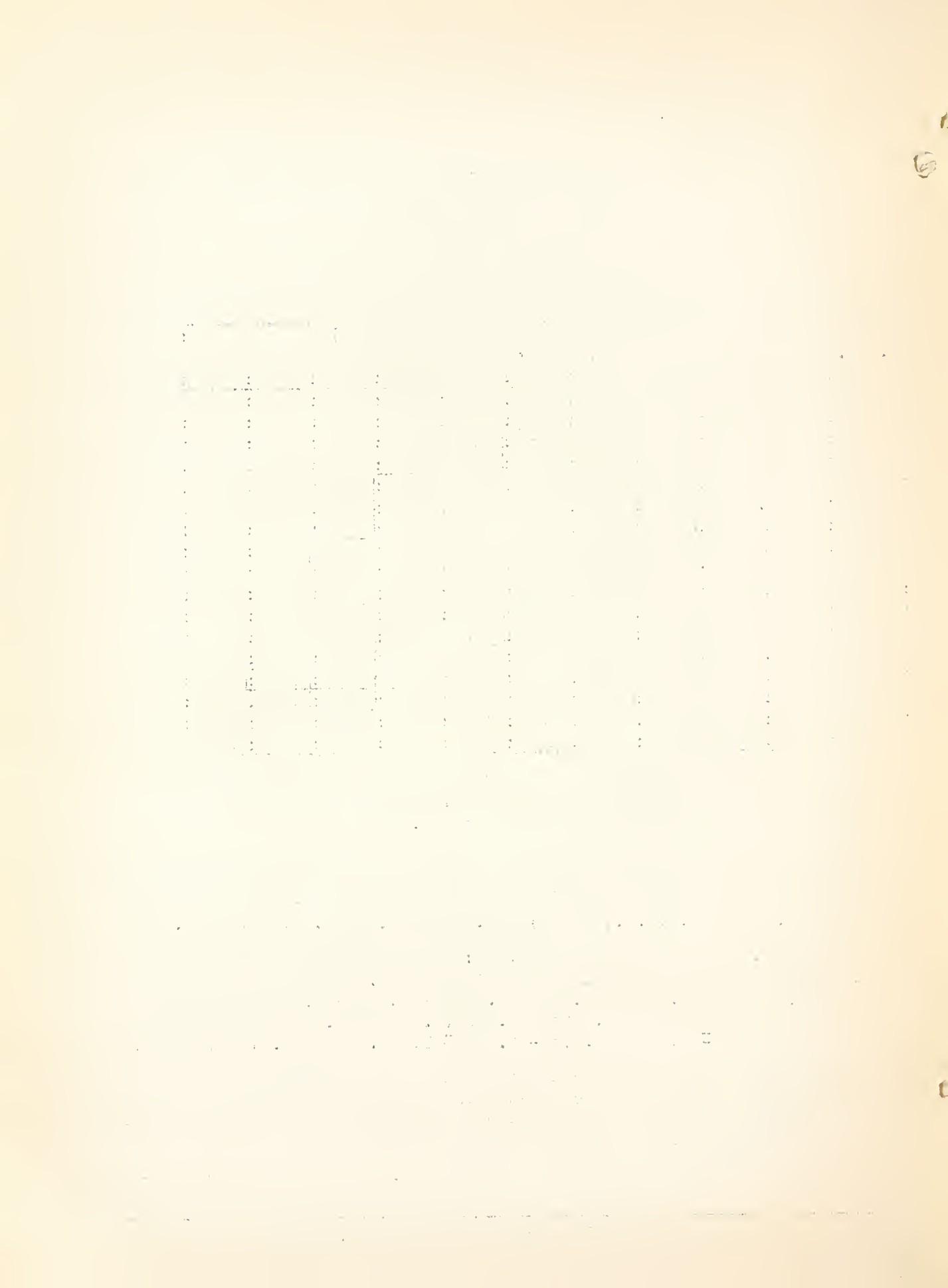
$$V = 2.745 (1.602) + 0.662 (1.681) - 2.074$$

$$V = 4.397 + 1.113 - 2.074 = 3.436, \text{ Antilog. is } 2,729 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined irrespective of site.



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(S-Timber Surveys)

TABLE 23 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK BIRCH\*

Cherokee, Nantahala, Pisgah National Forests and Bland Co., Va.

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

		Gross volume in board feet (tens)									
D.B.H.		by 16 ft. log lengths.									
Inches	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3	$3\frac{1}{2}$	4			
:	:	:	:	:	:	:	:	:	:	:	:
:	10	2	3	4							
:	12	2	4	6	8						
:	14	4	6	9	11	13	15				
:	16	5	9	12	15	18	21	24	26		
:	18	6	11	16	20	24	27	31	34		
:	:	:	:	:	:	:					
:	20	8	14	20	25	30	35	39	44		
:	22	10	18	25	31	37	43	49	54		
:	24	12	22	30	38	46	53	60	67		
:	26		26	36	46	55	64	72	80		
:	28		31	43	55	65	76	86	95		
:	:	:	:	:	:	:	:	:			
:	30		37	51	64	77	88	100	112	Computed by BF	
:	32		43	59	74	89	103	116	125	Checked by CRR	

Block indicates extent of basic data

Aggregate difference: Table 1.49% low  
Average individual deviation: 12.5%

Based on 81 stem measurements from which the following logarithmic formula was derived and used to construct table:

$$\text{Log Volume} = 2.310 (\log \text{d.b.h.}, \text{inches}) + 0.804 (\log \text{merch. ht.}, \text{ft.}) - 1.816$$

Table can be extended by formula as follows:

Example: Volume is desired for 3 log, 36 inch trees.

$$\text{Log. Volume} = 2.310 (\log .36) + 0.804 (\log .48) - 1.816$$

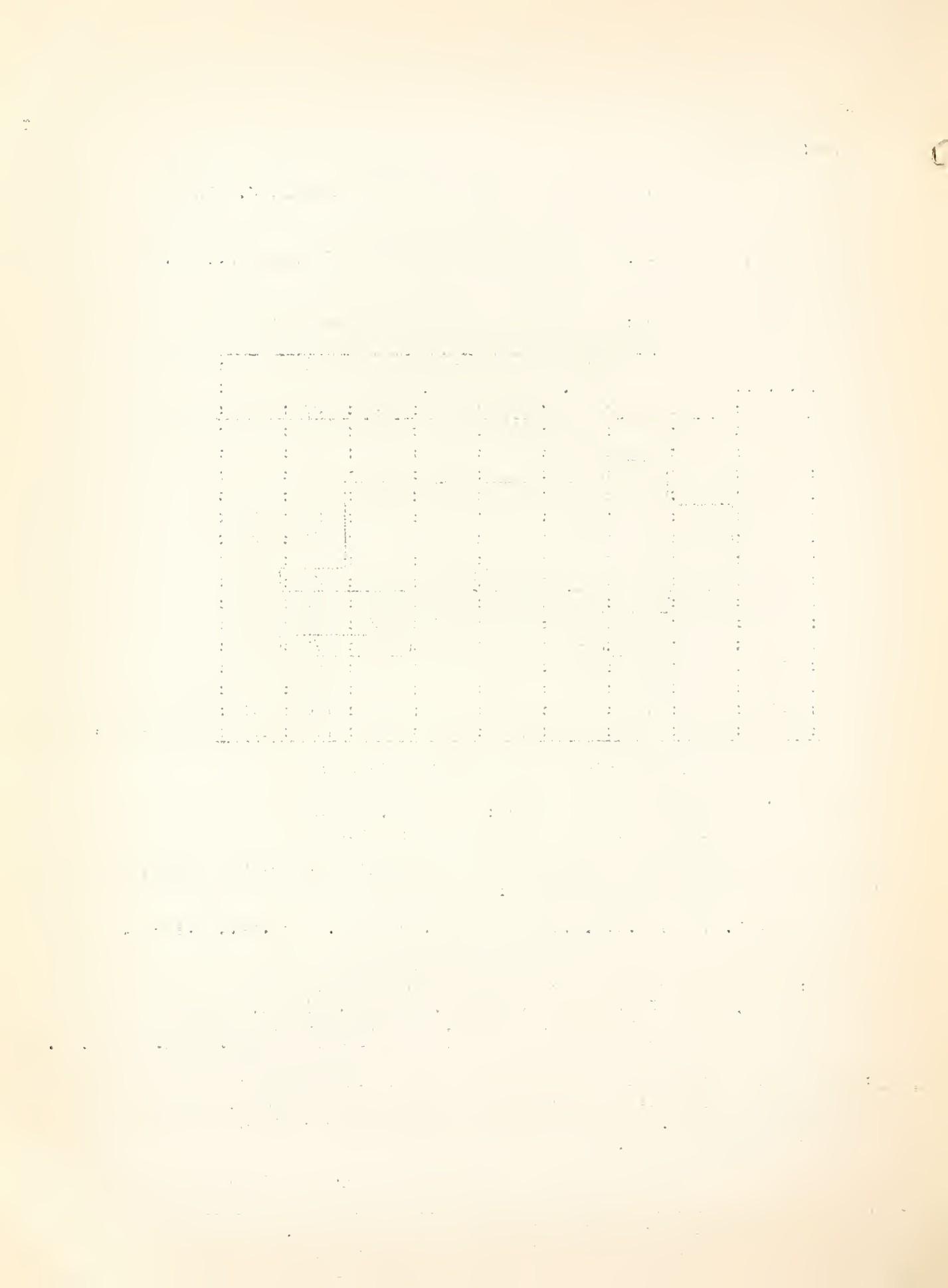
$$V = 2.310 (1.556) + 0.804 (1.681) - 1.816$$

$$V = 3.594 + 1.352 - 1.816 = 3.130, \text{Antilog. is } 1.349 \text{ bd.ft.}$$

NOTE: This volume table was constructed at the Appalachian Forest Experiment Station from field data collected by administrative personnel on National Forests of Region 8. The table is subject to later revision through inclusion of additional data.

Leonard I. Barrett - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined irrespective of site.



RS - AP

M-1

(S-Timber Surveys)

TABLE 1A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
:	:	:Gross :	:Net :	
:	:	:Ave. :Vol. in:	:Vol. in:	
:	D.B.H.	:Merch.:tens, %	:tens,	:
:	Inches	:Ht. :bd. ft.	:Defect	:bd. ft.
:	:	:	:	:
:	10	: 10 : 2.0	: 9.5	: 1.8 :
:	12	: 12 : 3.6	: 12.1	: 3.2 :
:	14	: 16 : 6.7	: 14.9	: 5.7 :
:	16	: 18 : 10.3	: 17.5	: 8.5 :
:	18	: 20 : 15.2	: 20.2	: 12.1 :
:	20	: 22 : 21.6	: 22.9	: 16.7 :
:	22	: 22 : 27.6	: 25.5	: 20.6 :
:	24	: 24 : 37.1	: 28.3	: 26.6 :
:	26	: 24 : 45.9	: 30.9	: 31.7 :
:	28	: 26 : 58.9	: 33.6	: 39.1 :
:	30	: 26 : 70.6	: 35.8	: 52.4 :
:	32	: 26 : 83.8	: 37.2	: 52.6 :
:	34	: 28 : 104.0	: 37.6	: 64.9 :
:	36	: 28 : 120.4	: 37.6	: 75.1 :
:	38	: 28 : 139.2	: 37.6	: 86.9 :
:	40	: 28 : 159.2	: 37.6	: 99.3 : Computed by BF
:	42	: 28 : 180.7	: 37.6	: 112.8 : Checked by PEL
:	:	:	:	:

Aggregate Difference: Table 2.6% high

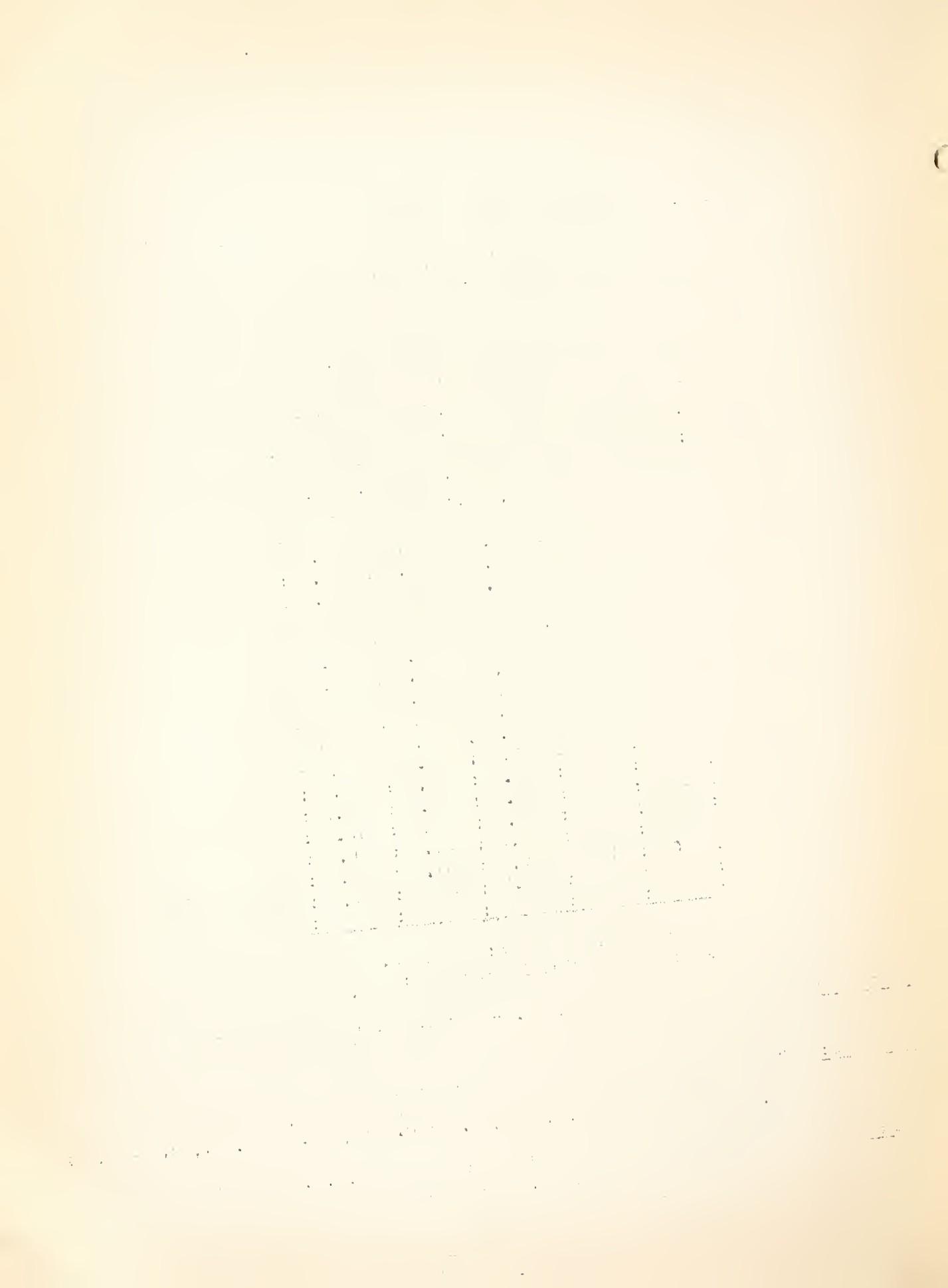
Average Individual Deviation: 24.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula which was based on 71 trees.  
 $\text{Log.Vol.} = 2.335 (\text{log.D.B.H.,in.}) + 0.721 (\text{log.merch.h.t.,ft.}) - 2.062$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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M-1  
(S-Timber Surveys)

TABLE 2A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2)	(3)	(4)	(5) :
:		Gross		Net
:	Av.	Vol. in:		Vol. in:
: D.B.H.	: Merch.	: tcs	: %	: tens
: Inches	: Ht.	: bd. ft.	: Defect	: bd. ft.
:	:	:	:	:
:	10	28	4.7	9.8
:	12	30	7.8	12.8
:	14	30	11.5	15.2
:	16	32	16.9	17.2
:	18	34	23.6	18.6
:	20	34	31.0	19.8
:	22	36	40.8	20.7
:	24	36	51.0	21.3
:	26	36	62.8	21.5
:	28	38	78.3	21.8
:	30	36	90.3	21.9
:	32	36	106.6	21.9
:	34	36	124.9	21.9
:	36	34	139.0	22.0
:	38	32	154.5	22.0
:	40	30	168.6	22.0
:	42	28	182.9	22.0
:	44	28	207.5	22.0
:	46	26	221.8	22.0
:	48	26	246.6	22.0
				175.0 : Computed by CRR
				192.3 : Checked by BF

Aggregate Difference: Table 1.47% low

Average Individual Deviation: 18.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 88 trees.

$$\text{Log.Vol.} = 2.558 (\log.\text{D.B.H.}, \text{in.}) + 0.612 (\log.\text{merch.h.t.}, \text{ft.}) - 1.774$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 3A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE OAK - SITE III  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
	Ave.	:Vol. in:	:Vol. in:	
D.B.H.	Merch.	:tens,	%	:tens,
Inches	Ht.	:bd. ft.	Defect	:bd. ft.
:	:	:	:	:
:	10	14	2.6	20.4
:	12	16	4.7	20.4
:	14	18	7.8	20.4
:	16	20	12.0	20.4
:	18	20	16.4	20.4
:	20	22	23.4	20.4
:	22	24	32.1	20.4
:	24	24	40.6	20.4
:	26	26	53.4	20.4
:	28	26	65.0	20.4
:	30	26	78.3	20.4
:	32	26	93.0	20.4
:	34	26	109.9	20.4
:	36	26	127.6	20.4
:	38	26	148.0	20.4
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 3.46% high

Average Individual Deviation: 19.6%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 93 trees.

$$\text{Log.Vol.} = 2.688 (\text{log.D.B.H.,in.}) + 0.709 (\text{log.merch.ht.,ft}) - 2.079$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 4A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

N. RED OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :
:		Gross :		Net :
:		Ave. Vol. in:		Vol. in:
:D.B.H.	:Merch.	:tens,	%	:tens,
:Inches	:Ht.	:bd. ft.	:Defect	:bd. ft.:
:	:	:	:	:
:	10	28	4.6	0.0
:	12	30	7.6	5.1
:	14	32	11.6	12.9
:	16	34	16.7	18.4
:	18	34	22.5	21.5
:	20	36	30.1	23.4
:	22	36	37.9	24.5
:	24	38	48.8	25.2
:	26	38	59.5	25.5
:	28	38	71.4	25.5
:	30	38	84.4	25.5
:	32	40	102.6	25.5
:	34	40	119.7	25.5
:	36	40	136.8	25.5
:	38	40	156.7	25.5
:	40	40	177.4	25.5
:	42	40	200.0	25.5
:	44	40	225.4	25.5
:	46	40	250.6	25.5
:	48	40	278.0	25.5
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 0.09% low  
Average Individual Deviation: 17.7%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 129 trees.  
 $\text{Log.Vol.} = 2.456 (\text{log.D.B.H.,in.}) + 0.686 (\text{log.merch.ht.,ft.}) - 1.784$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS-AP

M-1

(S-Timber Surveys)

TABLE 5A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK OAK - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
	:Gross:	:Net:		
	:Ave. Vol. in:	:Vol. in:		
D.B.H.	Merch. tens,	%	tens,	
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
:	10	10	2.1	34.0
:	12	20	5.6	30.5
:	14	30	11.3	26.9
:	16	34	17.4	23.1
:	18	36	24.3	19.3
:	20	36	31.7	15.7
:	22	38	41.8	12.5
:	24	38	52.2	10.5
:	26	38	63.6	10.5
:	28	40	79.7	10.5
:	30	40	94.7	10.5
:	32	40	111.2	10.5
:	34	40	129.9	10.5
:	36	40	149.2	10.5
:	38	40	171.5	10.5
:	40	40	194.4	10.5
:	42	40	219.4	10.5
:	44	40	247.6	10.5
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 2.87% high

Average Individual Deviation: 20.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 79 trees.

$$\text{Log.Vol.} = 2.500 (\text{log.D.B.H.,in.}) + 0.767 (\text{log.merch.ht.,ft.}) - 1.945$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
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(S-Timber Surveys)

TABLE 6A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
		Av.	Vol. in:	:Vol. in:
D.B.H.:Inches	Merch.:Ht.	tens, %	tens, %	
		bd. ft.	Defect	bd. ft.
:	:	:	:	:
:	10	22	4.1	0.0
:	12	28	7.7	0.9
:	14	34	13.2	10.0
:	16	38	19.9	19.0
:	18	44	30.0	21.8
:	20	50	43.0	22.2
:	22	52	55.8	22.4
:	24	54	71.2	22.6
:	26	56	89.3	22.8
:	28	56	106.7	23.1
:	30	58	129.6	23.3
:	32	58	151.5	23.5
:	34	58	176.1	23.8
:	36	58	201.2	24.0
:	38	58	230.0	24.2
:	40	60	267.7	24.5
:	42	60	300.8	24.7
:	44	60	337.8	24.9
:	46	60	375.6	25.1
:	48	60	415.6	25.3
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 1.05% high  
Average Individual Deviation: 14.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 86 trees.

$$\text{Log.Vol.} = 2.417 (\log.\text{D.B.H.,in.}) + 0.831 (\log.\text{merch.ht.,ft.}) - 1.922$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
M-1  
(S-Timber Surveys)

TABLE 7A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

RED MAPLE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :
:	:	Gross :	Net :	
:	:	Avg. : Vol. in:	Vol. in:	
D.B.H.	Merch.	tens,	%	tens,
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
:	10	24	4.6	21.4
:	12	28	7.8	21.4
:	14	30	11.7	21.4
:	16	32	16.8	21.4
:	18	34	23.0	21.4
:	20	36	30.8	21.4
:	22	38	40.0	21.4
:	24	38	49.1	21.4
:	26	40	61.5	21.4
:	28	40	73.1	21.4
:	30	40	86.1	21.4
:	32	40	100.3	21.4
:	34	42	119.9	21.4
:	36	42	136.4	21.4
:	38	42	155.6	21.4
:	40	42	174.8	21.4
:	42	42	196.2	21.4
:	44	42	219.6	21.4
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 1.64% high  
Average Individual Deviation: 20.5%

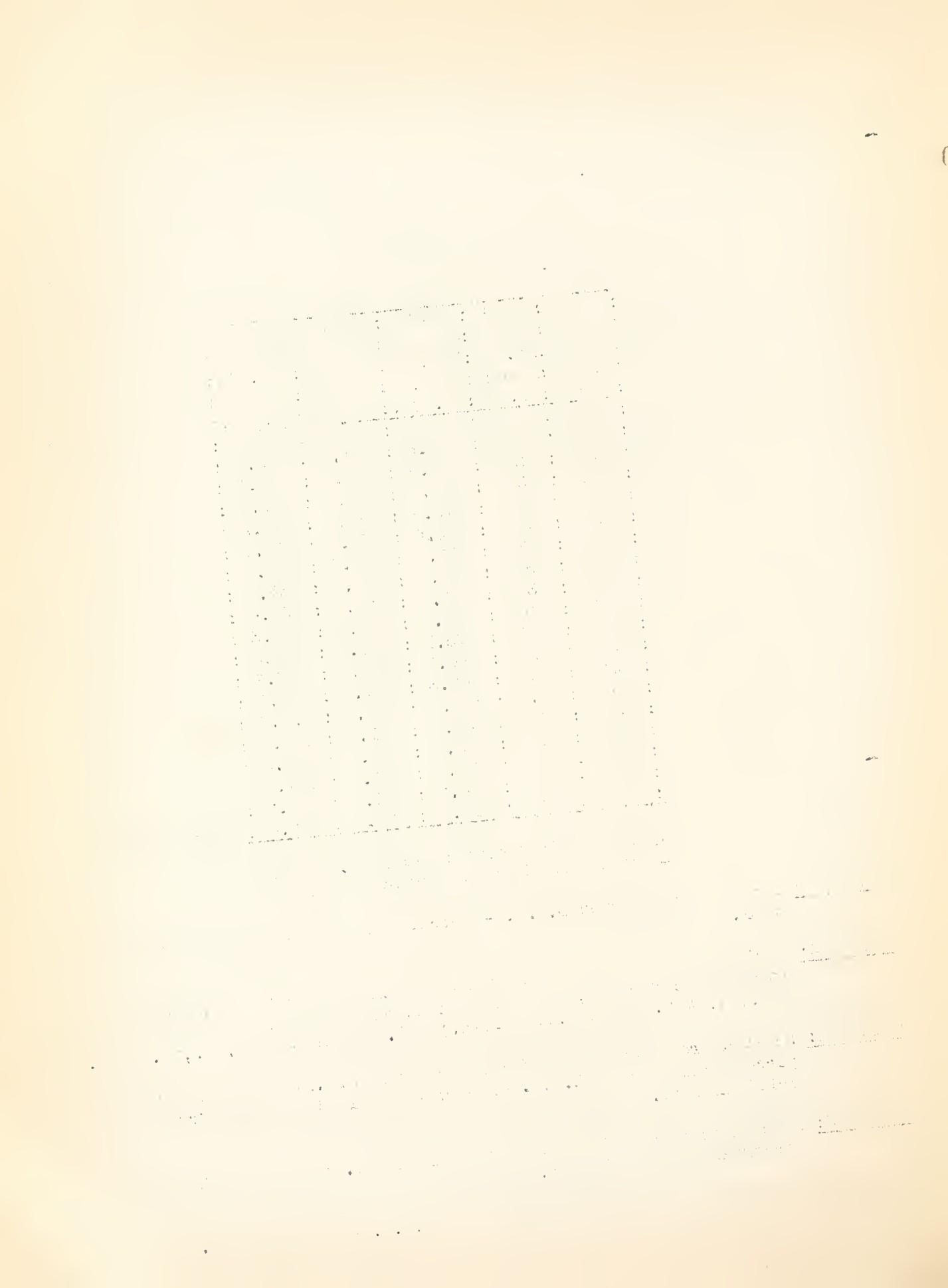
Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 75 trees.

$$\text{Log.Vol.} = 2.349 (\log.\text{D.B.H.,in.}) + 0.705 (\log.\text{merch.ht.,ft.}) - 1.664$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
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(S-Timber Surveys)

TABLE 8A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BASSWOOD - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

:	(1)	(2)	(3)	(4)	(5)	:
:		Gross		Not		:
:	:Av.	:Vol. in:		:Vol. in:		:
:	D.B.H.	Merch.	tcons,	%	tcons,	:
:	Inches	Ht.	:bd. ft.	Defect	:bd. ft.	:
:						:
:	10	16	3.2	7.1	3.0	:
:	12	20	6.0	11.0	5.3	:
:	14	24	10.0	15.0	8.5	:
:	16	30	16.4	18.7	13.3	:
:	18	34	24.0	21.5	18.8	:
:	20	40	35.3	22.8	27.3	:
:	22	44	47.8	23.5	36.6	:
:	24	48	63.2	24.1	48.0	:
:	26	50	79.2	24.6	59.7	:
:	28	50	94.6	25.1	70.9	:
:	30	50	111.7	25.5	83.2	:
:	32	48	126.2	26.0	93.4	:
:	34	48	146.6	26.4	107.9	:
:	36	46	161.8	26.8	118.4	:
:	38	46	184.6	27.3	134.2	Computed by CRR
:	40	46	208.4	27.6	150.9	Checked by BF

Aggregate Difference: Table 0.66% high  
Average Individual Deviation: 20.2%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 92 trees.

$$\text{Log.Vol.} = 2.402 (\log \text{D.B.H., in.}) + 0.796 (\log \text{merch.h.t., ft.}) - 1.852$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS. - AP  
M-1  
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TABLE 9A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Nantahala National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2)	: (3)	: (4)	: (5) :
:	:	Gross	:	Net
:	Av.	:Vol. in:	:	:Vol. in:
:D.B.H.	:Merch.	:tens,	%	:tens,
:Inches	:Ht.	:bd. ft.	:Defect	:bd. ft.
:	:	:	:	:
:	10	22	4.1	8.2 : 3.8 :
:	12	32	8.7	8.2 : 8.0 :
:	14	42	15.9	8.2 : 14.6 :
:	16	48	24.4	8.2 : 22.4 :
:	18	54	35.4	8.2 : 32.5 :
:	20	60	49.8	8.2 : 45.7 :
:	22	62	64.0	8.2 : 58.8 :
:	24	64	80.5	10.1 : 72.4 :
:	26	64	97.3	16.1 : 81.6 :
:	28	64	115.3	22.0 : 89.9 :
:	30	64	135.5	28.0 : 97.6 :
:	32	64	157.4	34.1 : 103.7 :
:	34	64	182.0	40.1 : 109.0 : Computed by CRR
:	36	62	201.2	46.2 : 108.2 : Checked by BF
:	:	:	:	:

Aggregate Difference: Table 0.30% high  
Average Individual Deviation: 16.3%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 97 trees.

$$\text{Log.Vol.} = 2.326 (\log.\text{D.B.H.,in.}) + 0.880 (\log.\text{merch.h.t.,ft.}) - 1.893$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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M-1  
(S-Timber Surveys)

TABLE 10A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III

Nantahala National Forest

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :
:		Gross		Net
:		Av.	Vol. in:	Vol. in:
D.B.H.	Merch.	tens,	%	tens,
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
:	10	18	3.6	8.2
:	12	24	7.0	8.2
:	14	30	12.0	8.2
:	16	36	19.1	8.2
:	18	40	27.4	8.2
:	20	42	36.5	8.2
:	22	46	49.1	8.2
:	24	48	62.2	10.1
:	26	48	75.0	16.1
:	28	48	88.9	22.0
:	30	48	104.2	28.0
:	32	48	121.1	34.1
				79.8
				Computed by CRR
				Checked by BF
				:

Aggregate Difference: Table 3.47% low

Average Individual Deviation: 21.6%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 61 trees.

$$\text{Log.Vol.} = 2.311 (\log.\text{D.B.H.,in.}) + 0.852 (\log.\text{merch.ht.,ft.}) - 1.827$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 11A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE II  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :
:	:	Gross :	Net :	
:	D.b.h.	Vol. in:	Vol. in:	
:	Merch. :tens,	%	tens,	
:	Inches :Ht.	:bd. ft.	:Defect	:bd. ft.:
:	:	:	:	:
:	10	22	4.0	0.0
:	12	32	8.8	2.5
:	14	38	15.0	5.5
:	16	44	23.6	6.0
:	18	48	34.7	6.0
:	20	50	47.0	6.0
:	22	54	63.9	6.0
:	24	56	82.4	6.0
:	26	58	104.3	6.0
:	28	60	129.7	6.0
:	30	60	155.0	6.0
:	32	62	188.0	6.0
:	34	62	220.7	6.0
:	36	62	254.5	6.0
				Computed by BF
				Checked by BF

Aggregate Difference: Table 0.07% high  
Average Individual Deviation: 20.1%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 135 trees.  
 $\text{Log.Vol.} = 2.579 (\text{log.D.B.H.,in.}) + 0.809 (\text{log.merch.ht.,ft.}) - 2.057$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP  
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TABLE 12A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SHORTLEAF PINE - SITE III  
Cherokee National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :
:	:	Gross :	:	Net :
:	:	Av. Vol. in:	:	Vol. in:
:D.B.H.	:Merch.:	:tons,	%	:tons,
:Inches	:Ht.	:bd. ft.	:Defect	:bd. ft.:
:	:	:	:	:
:	10	22	3.9	0.7
:	12	28	7.7	3.5
:	14	34	13.6	5.4
:	16	40	22.1	6.0
:	18	44	32.6	6.0
:	20	46	44.7	6.0
:	22	46	57.4	6.0
:	24	46	72.5	6.0
:	26	46	89.8	6.0
:	28	46	109.1	6.0
:	30	46	130.9	6.0
:	32	46	155.3	6.0
:	34	46	183.3	6.0
:	36	46	212.3	6.0
				Computed by BF
				Checked by PEL
				:

Aggregate Difference: Table 4.06% high  
Average Individual Deviation: 20.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 88 trees.  
 $\text{Log.Vol.} = 2.650 (\text{log.D.B.H.,in.}) + 0.802 (\text{log.merch.ht.,ft.}) - 2.130$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 13. - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

VIRGINIA PINE - SITE II  
Cherokee National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
		Av.	Vol. in:	Vol. in:
D.B.H.	Merch.	tens,	%	tens,
Inches	Ht.	:bd. ft.	Defect	:bd. ft.
:	:	:	:	:
:	8	24	2.5	13.7
:	10	28	4.8	11.2
:	12	32	8.2	8.5
:	14	36	13.0	5.7
:	16	40	19.5	3.0
:	18	44	27.8	0.3
:	20	48	38.4	0.0
:	22	52	51.1	0.0
:	24	54	64.9	0.0
				Computed by BF
				Checked by PEL

Aggregate Difference: Table 2.44% high  
Average Individual Deviation: 18.8%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived from substituting values of columns 1 and 2 in following logarithmic formula, which was based on 66 trees.

$$\text{Log.Vol.} = 2.404 (\log.\text{D.B.H.,in.}) + 0.762 (\log.\text{merch.ht.,ft.}) - 1.825$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 14A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE I

Pisgah National Forest

Trees over 75 years old

Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
		Avg.	Vol. in:	Vol. in:
D.B.H.:Merch.	tens,	%	tens	
Inches:Ht.	:bd. ft.	:Defect	:bd. ft.	
10	10	1.9	22.4	1.5
12	16	4.2	22.8	3.2
14	22	7.7	23.4	5.9
16	28	12.6	24.0	9.6
18	34	19.2	24.5	14.5
20	38	26.7	24.9	20.1
22	42	35.8	25.4	26.7
24	48	48.5	26.0	35.9
26	50	60.1	26.5	44.2
28	50	70.9	27.0	51.8
30	50	83.0	27.5	60.2
32	50	96.0	28.0	69.1
34	50	110.7	28.5	79.2
36	50	125.3	29.2	88.6
38	52	146.3	29.7	102.8
40	52	164.2	30.2	114.6
42	52	183.2	30.8	126.8
44	52	204.4	31.3	140.4
46	52	225.6	31.8	153.9
48	52	247.9	32.4	167.6
50	52	272.2	33.0	182.4
52	52	297.4	33.5	197.8
54	52	323.1	34.0	213.2
56	52	351.0	34.5	229.9
58	52	379.6	35.0	246.7 : Computed by CRR
60	52	410.5	35.5	264.8 : Checked by BF

Aggregate Difference: Table 2.53% high

Average Individual Deviation: 16.5%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 214 trees.

$$\text{Log.Vol.} = 2.263 (\text{log.D.B.H.,in.}) + 0.791 (\text{log.merch.ht.,ft.}) - 1.767$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 15A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT - SITE II  
Pisgah National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
		Avg.	Vol. in:	Vol. in:
D.B.H.	Merch.	tens	%	tens
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
10	6	1.2	0.0	1.2
12	14	3.7	2.0	3.6
14	24	8.0	9.8	7.2
16	30	12.8	15.0	10.9
18	34	18.6	18.8	15.1
20	36	24.8	21.5	19.5
22	38	32.2	23.8	24.5
24	40	41.1	25.8	30.5
26	40	49.7	27.8	35.9
28	40	59.1	29.6	41.6
30	40	69.5	31.0	48.0
32	40	81.0	32.0	55.1
34	40	93.7	32.6	63.2
36	38	102.7	33.0	68.8
38	38	117.0	33.3	78.0
40	36	126.7	33.4	84.4
42	36	142.0	33.5	94.4
44	34	152.7	35.5	101.5
46	34	169.2	35.5	112.5
48	32	178.7	33.5	118.8 : Computed by CRR
50	32	197.0	33.5	131.0 : Checked by BF

Aggregate Difference: Table 1.52% low

Average Individual Deviation: 17.1%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 91 trees.  
 $\text{Log.Vol.} = 2.354 (\text{log.D.B.H.,in.}) + 0.725 (\text{log.merch.ht.,ft.}) - 1.796$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

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TABLE 16A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SUGAR MAPLE - SITE I  
Pisgah National Forest

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2)	(3)	(4)	(5) :
:		Gross		Net
:	Avg.	Vol. in:		Vol. in:
D.B.H.:	Merch.:	tens	%	tens
Inches:Ht.		:bd. ft.:Defect		:bd. ft.:
:	:	:	:	:
:	10	18	3.4	0.0
:	12	22	5.9	6.4
:	14	26	9.2	13.1
:	16	30	13.6	18.6
:	18	34	19.0	22.7
:	20	38	25.8	25.3
:	22	42	53.9	26.3
:	24	44	42.4	26.7
:	26	48	53.5	27.2
:	28	50	64.5	27.5
:	30	52	77.0	28.0
:	32	52	88.6	28.5
:	34	52	101.6	28.8
:	36	52	114.6	29.2
:	38	50	126.0	29.7
:	40	48	137.1	30.0
:	42	48	152.4	30.4
:	44	46	164.7	30.5
:	46	44	176.1	30.5
:	48	44	192.8	30.5
				134.0 : Checked by BF
				122.4 : Computed by CRR

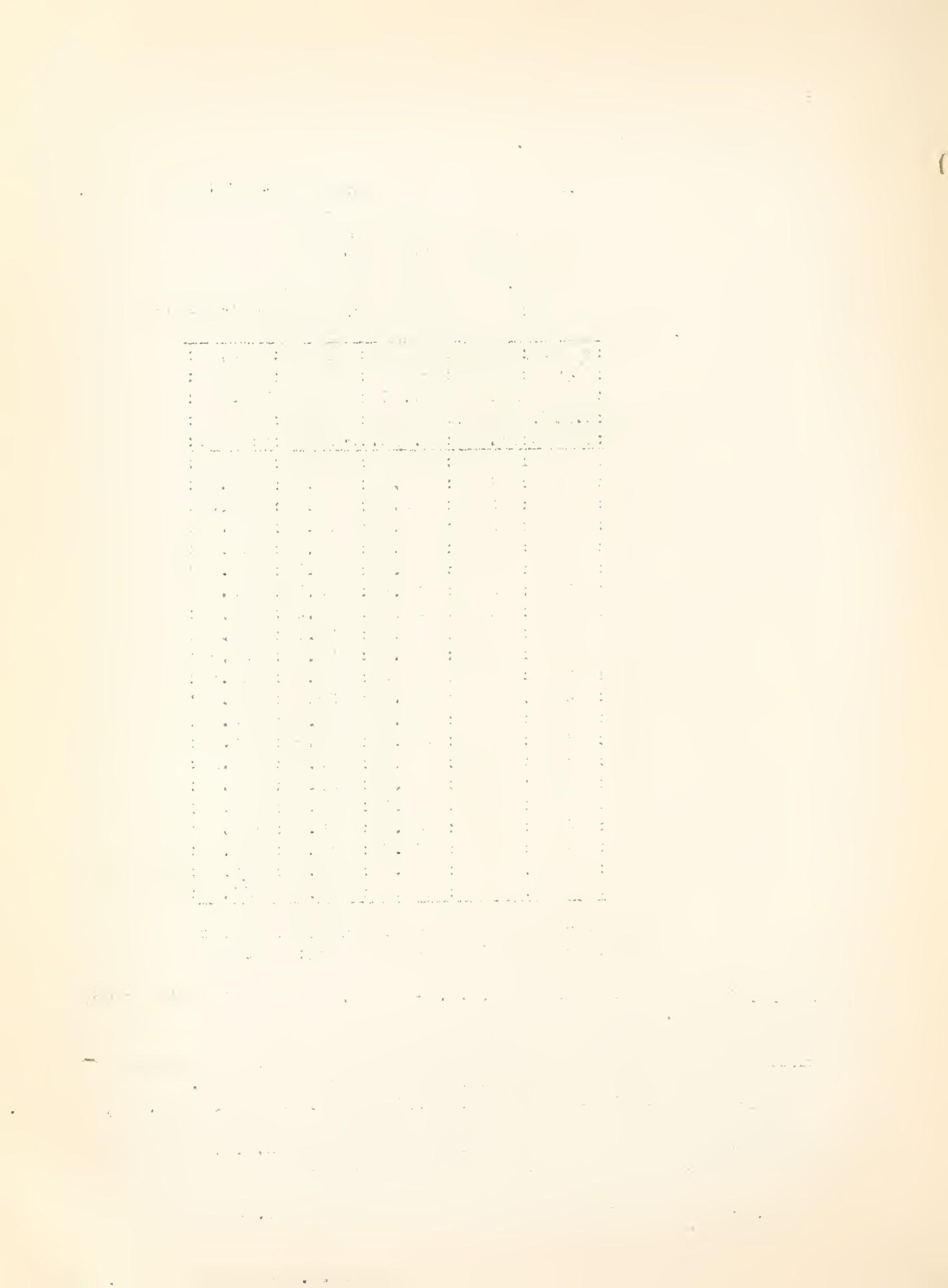
Aggregate Difference: Table 0.79% low  
Average Individual Deviation: 24.3%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 81 trees.  
 $\text{Log.Vol.} = 2.189 (\text{log.D.B.H.,in.}) + 0.653 (\text{log.merch.ht.,ft.}) - 1.467$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 17A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE PINE - SITE I  
Pisgah National Forest

Trees under 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
		Av.	Vol. in:	Vol. in:
D.B.H.	March.	tens	%	tens
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
10	22	3.4	4.8	3.2
12	26	5.9	5.1	5.6
14	28	8.7	5.5	8.2
16	32	13.0	5.9	12.2
18	36	18.5	6.3	17.3
20	38	24.4	6.6	22.8
22	42	32.6	7.0	30.3
24	44	41.0	7.5	37.9
26	46	50.6	7.5	46.8
28	50	63.6	7.5	58.8
30	52	76.4	7.5	70.7
32	54	90.6	7.5	83.8
34	58	110.2	7.5	101.9 : Computed by CRR
36	60	127.7	7.5	118.1 : Checked by BF
:	:	:	:	:

Aggregate Difference: Table 1.25% high  
Average Individual Deviation: 19.4%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 66 trees.

$$\text{Log.Vol.} = 2.142 (\log.\text{D.B.H.,in.}) + 0.875 (\log.\text{merch.h.t.,ft.}) - 1.782$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 18A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

CHESTNUT OAK - SITE II  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2) :	(3) :	(4) :	(5) :
:		Gross		Net
:		Av.	Vol. in:	Vol. in:
D.B.H.:	Merch.:	tens	%	tens
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
:	10	10	1.9	1.3
:	12	16	4.2	6.7
:	14	18	6.8	12.0
:	16	22	11.0	17.4
:	18	26	18.3	22.5
:	20	28	23.2	25.1
:	22	30	31.0	25.5
:	24	32	40.9	25.0
:	26	34	52.6	24.6
:	28	36	66.2	24.2
:	30	38	82.5	23.7
:	32	38	97.8	23.2
:	34	40	119.1	22.7
:	36	42	142.2	22.3
:	38	42	164.6	21.8
:	40	44	194.0	21.4
:	42	46	226.8	21.0
:	44	46	257.6	20.5
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 0.49% high  
Average Individual Deviation: 21.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 80 trees.  
 $\text{Log.Vol.} = 2.648 (\text{log.D.B.H.,in.}) + 0.637 (\text{log.merch.ht.,ft.}) - 2.001$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 19A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

YELLOW POPLAR - SITE I  
Cherokee, Nantahala and Pisgah National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

: (1) :	(2)	(3)	(4)	(5) :
:		Gross		Net
:	Liv.	:Vol. in:		:Vol. in:
D.B.H.	Merch.	:tens	%	:tens
Inches	Ht.	:bd. ft.	Defect	:bd. ft.
:	:	:	:	:
:	10	16	2.6	0.0
:	12	26	6.2	0.6
:	14	36	11.8	5.2
:	16	44	19.6	9.8
:	18	50	29.4	14.4
:	20	54	41.2	18.8
:	22	56	54.2	20.7
:	24	58	70.0	20.7
:	26	60	88.6	20.5
:	28	62	109.9	20.1
:	30	62	131.5	19.6
:	32	64	159.6	19.3
:	34	64	187.5	18.9
:	36	64	216.3	18.5
:	38	64	249.5	18.0
:	40	64	284.4	17.7
:	42	66	330.7	17.3
:	44	66	375.2	16.9
:	46	66	420.1	16.5
:	48	66	468.1	16.0
:	50	66	520.4	15.6
				Computed by CRR
				Checked by BF

Aggregate Difference: Table 1.16% high  
Average Individual Deviation: 19.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 74 trees.

$$\text{Log.Vol.} = 2.597 (\text{log.D.B.H.,in.}) + 0.783 (\text{log.merch.ht.,ft.}) - 2.120$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

1. The first step in the process of creating a new product is to identify a market need or opportunity. This involves conducting market research to understand consumer needs, preferences, and behaviors. It also requires analyzing existing products in the market to identify gaps or areas where innovation can be applied.

2. Once a market need is identified, the next step is to develop a product concept. This involves defining the product's features, benefits, and positioning. It may involve creating prototypes or sketches to visualize the product and refine its design. The product concept should be clearly defined to guide the development process.

3. The third step is to plan the product development process. This involves determining the resources required, setting timelines, and establishing a budget. It also involves identifying key stakeholders and their roles in the development process. A clear plan ensures that all team members are aligned and working towards the same goal.

4. The fourth step is to design the product. This involves creating detailed blueprints, prototypes, and technical specifications. It may involve working with engineers, designers, and manufacturers to ensure the product is feasible and meets quality standards. The design phase is crucial for ensuring the product functions as intended and meets user requirements.

5. The fifth step is to prototype the product. This involves creating a physical or digital representation of the final product. Prototyping allows for testing and refining the design before full-scale production begins. It helps identify any potential issues or areas for improvement before investing in large quantities.

6. The sixth step is to manufacture the product. This involves finding a suitable supplier or manufacturer who can produce the product in the required quantity and quality. It may involve negotiating contracts, establishing supply chain relationships, and monitoring production processes to ensure consistency and efficiency.

7. The seventh step is to distribute the product. This involves finding retail partners, establishing distribution channels, and managing logistics to get the product to consumers. Distribution is crucial for reaching the target market and generating revenue.

8. The eighth step is to market the product. This involves developing a marketing strategy, creating promotional materials, and launching the product through various channels. Marketing efforts aim to raise awareness, build brand equity, and drive sales.

9. The ninth step is to sell the product. This involves interacting with customers, handling inquiries, and managing sales transactions. Effective selling requires excellent communication skills, a deep understanding of the product, and a focus on customer satisfaction.

10. The tenth and final step is to evaluate the product's performance. This involves tracking sales data, monitoring feedback, and assessing the product's impact on the market. Evaluation provides valuable insights for future product development and informs strategic decisions.

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TABLE 20A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

SCARLET OAK - SITE III  
Nantahala and Cherokee National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
D.B.H.	Merch. Inches	Gross Av.	Vol. in: tens	Net Vol. in: % Defect bd. ft.
Inches	Ht.	bd. ft.	Defect	bd. ft.
10	12	2.4	14.1	2.1
12	14	4.3	17.3	3.6
14	16	6.9	20.4	5.5
16	20	11.3	23.7	8.6
18	22	16.1	27.0	11.8
20	24	22.3	30.2	15.6
22	26	29.8	33.4	19.8
24	30	41.0	36.7	26.0
26	32	52.5	40.0	31.5
28	34	65.7	43.1	37.4
30	36	81.0	46.5	43.3
32	38	98.7	49.8	49.5
34	58	114.6	53.0	53.9 : Computed by BF
36	38	131.0	56.4	57.1 : Checked by PEL

Aggregate Difference: Table 3.07% high  
Average Individual Deviation: 22.0%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 80 trees.  
 $\text{Log.Vol.} = 2.401 (\text{log.D.B.H.,in.}) + 0.780 (\text{log.merch.h.t.,ft.}) - 1.851$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



RS - AP

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TABLE 21A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

B.SSWOOD - SITE I  
Pisgah and Nantahala National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
		Av.	Vol. in	Vol. in
D.B.H.	Merch.	tens	%	tens
Inches	Ht.	bd. ft.	Defect	bd. ft.
:	:	:	:	:
:	10	30	3.9	6.6
:	12	32	6.6	7.5
:	14	36	11.0	8.5
:	16	40	17.2	9.8
:	18	42	24.6	11.6
:	20	46	35.1	14.3
:	22	48	46.8	18.1
:	24	50	61.3	22.7
:	26	52	78.6	29.4
:	28	52	95.5	39.0
:	30	52	114.8	50.1
:	32	52	136.2	61.3
:	34	52	160.7	72.5
				Computed by BF
				Checked by PEL
				:

Aggregate Difference: Table 0.62% low

Average Individual Deviation: 22.9%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 61 trees.

$$\text{Log.Vol.} = 2.662 (\log.\text{D.B.H.,in.}) + 0.855 (\log.\text{merch.h.t.,ft.}) - 2.339$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.



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TABLE 224 - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

WHITE LSH\*

Pisgah and Nantahala National Forests

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

(1)	(2)	(3)	(4)	(5)
		Gross	Net	
	Mv.	:Vol. in:	:Vol. in:	
D.B.H.	Merch.	:tons	%	:tons
Inches	Ht.	:bd. ft.	Defect	:bd. ft.
:	:	:	:	:
:	10	22	3.6	0.0
:	12	26	6.6	7.0
:	14	32	11.7	15.1
:	16	38	18.9	19.0
:	18	42	27.9	20.2
:	20	46	39.6	20.2
:	22	48	52.8	20.2
:	24	50	68.9	20.2
:	26	52	88.2	20.2
:	28	54	110.8	20.2
:	30	56	137.1	20.2
:	32	56	163.7	20.2
:	34	58	198.6	20.2
:	36	58	231.2	20.2
:	:	:	:	:

Computed by BF  
Checked by BF

Aggregate Difference: Table 3.29% high  
Average Individual Deviation: 19.2%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 68 trees.

$$\text{Log.Vol.} = 2.745 (\log.\text{D.B.H.,in.}) + 0.662 (\log.\text{merch.ht.,ft.}) - 2.074$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined, irrespective of site.



RS - AP  
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TABLE 23A - BOARD FOOT VOLUME TABLE - SCRIBNER DEC. C. RULE

BLACK BIRCH\*

Cherokee, Nantahala, Pisgah National Forests and Bland Co., Va.

Trees over 75 years old  
Utilization: 1 foot stump and merchantable top

:	(1)	:	(2)	:	(3)	:	(4)	:	(5)	:
:	:	:	Gross	:		:	Net	:		
:		Avg.	:Vol. in:				:Vol. in:			
:	D.B.H.	:Merch.	:tens	:	%	:	tens	:		
:	Inches	:Ht.	:bd. ft.	:	Defect	:	bd. ft.	:		
:	:	:	:	:	:	:	:	:	:	:
:	10	:	10	:	2.0	:	0.0	:	2.0	:
:	12	:	18	:	4.8	:	6.0	:	4.5	:
:	14	:	24	:	8.1	:	12.2	:	7.1	:
:	16	:	28	:	13.4	:	18.5	:	10.9	:
:	18	:	30	:	18.6	:	24.6	:	14.0	:
:	20	:	30	:	23.8	:	29.7	:	16.7	:
:	22	:	32	:	31.2	:	31.0	:	21.5	:
:	24	:	32	:	38.2	:	31.0	:	26.4	:
:	26	:	34	:	48.3	:	31.0	:	33.3	:
:	28	:	34	:	57.3	:	31.0	:	39.5	:
:	30	:	36	:	70.3	:	30.9	:	48.6	Computed by CRR
:	32	:	36	:	81.6	:	30.8	:	56.5	Checked by BF

Aggregate Difference: Table 0.62% high  
Average Individual Deviation: 32.7%

Column 2: Derived from curved D.B.H. - Merch. Ht. relationship of original data.

Column 3: Derived by substituting values of columns 1 and 2 in following logarithmic formula, which was based on 81 trees.

$$\text{Log.Vol.} = 2.310 (\log.\text{D.B.H.}, \text{In.}) + 0.804 (\log.\text{merch.h.t., ft.}) - 1.816$$

Column 4: Derived from curved relationship between D.B.H. class defect percent and average D.B.H. of each class as determined from original data.

Column 5: Results from reducing gross volumes in Col. 3 by the defect percentages given in Col. 4.

L.I.B. - January 1936.

\* Insufficient data available for site class volume tables. In making this table all stem measurements of this species were combined, irrespective of site.

